THE TIMES
Higher Education
SUPPLEMENT

Council defends PhD research record

by Charlotte Barry

Many research students in economics have published journal articles and books but not yet completed their PhDs a Social Science Research Council Study has revealed.

The results of the study are to be used in partial defence of the SSRC's postgraduate training record which has come under fire from outside agencies for its "deplorable" completion rate in the field of PhDs.

The council says the evidence shows that students not completing their PhD thesis may nonetheless have made a substantial contribution to research.

A recent SSRC survey showed that only one tenth of the total 2,318 students who began their PhDs in 1973 completed them within the "normal" time limit of three years. Only 19 per cent finished within four years, 31 per cent within five years and 43 per cent within six years. A further 42 per cent were still registered.

The new study of research students in economics carried out by Professor Tony Atkinson, chairman of the SSRC economics committee, shows that 38 per cent of the 213 students who began their research training between 1970-75 had completed their PhDs by the beginning of this year. A further 7 per cent were expected to finish shortly.

The completion rate for those who started between 1970-72 is 46 per cent, for those starting between 1973-75 it is 20 per cent, with considerable variations between university and polytechnic departments.

Their publication rate, however, is described as "impressive". A total of 85 out of the 213 have published 269 articles and 42 books. If taken as an index of "success" either completion of the degree or publication of at least one book or article, then the success rate is 56 per cent, says the study report.

Half the students have completed their degrees and published articles compared with 23 per cent for those who have not completed.

"The latter is still substantial and allowing for the fact that those who have not completed are probably less advanced in their careers, represents quite an impressive achievement", says the report.

Of the 177 students who replied to a questionnaire, 34 per cent have become lecturers in United Kingdom universities and a further 11 per cent are teaching in polytechnics, colleges of further education or schools. Exactly half those with completed PhDs are employed in United Kingdom university teaching and teaching accounts for two thirds of the PhDs whose current employment is known.

A further 14 per cent are working as private sector economists and 12 per cent are in government or international research institutions.

Graduates in demand for jobs

Graduate students are still in high demand by employers especially in the private sector, in spite of depression in the economic climate. The number going straight into permanent employment in the United Kingdom after graduation in 1979 was the highest ever at 51.1 per cent.

A recent publication by the Central Services Unit for University and Polytechnic Careers and Appointments Services states that employers realize they must continue to employ "high ability manpower" even in times of economic stringency.

The report, entitled *University Graduates: 1979 Summary of First Destination and Employment*, showed a 13.9 per cent increase of students going into buying, selling and marketing.

There was a drop in the number of students however finding jobs in central and local government and the percentage opting for teacher training was now down to 9 per cent, of the graduate population compared with 16.7 per cent 10 years ago.

The total number of graduates (65,457) continued to rise and women accounted for an ever increasing proportion, nearly 37 per cent of the total compared with 30 per cent 10 years ago. But the number of women higher degree graduates rose by 7.1 per cent last year while the percentage of men fell.

Ulster study programme planned

A major £350,000 research programme into the economic and social problems of Northern Ireland is to be set up by the Social Science Research Council.

The four-year scheme has been initiated following a recent council visit to Queen's University, Belfast, the New University of Ulster, Ulster Polytechnic and the Northern Ireland Office.

The programme, which will be set up over the next few months by an executive panel of the SSRC, will aim to look at Ulster's unemployment problems, industrial development, further development of rural areas, problems of the urban environment and regional planning.

"It occurred to us that it might be useful to set aside more money to promote research into these problems. We have been considering it for some time now as an important area", said Professor Michael Wise, chairman of the council's research board.

"We have had a panel which has conferred itself with the panel for North Sea oil in Scotland so we are interested in the development of areas within the UK and not only with the UK as a whole", he said.

● The SSRC's new centre for economic computing is to be sited at the University of Southampton. The council is now waiting for approval from the Department of Education and Science before going ahead with the £112,000 five-year project.

Buckingham looks towards a charter

by Ngaio Crequer

The Government has accorded the University College at Buckingham, Britain's only private university, official recognition by its decision to approve courses for mandatory student awards.

The move will encourage Buckingham, which survives on student fees and donations, in its long-term ambition to achieve Royal Charter status, without which it cannot award degrees. Until now only degree courses have been designated for mandatory awards but the Government has decided that Buckingham meets the equivalent status.

British students will be eligible for the awards from January next year. About two-thirds of the 370 students are from overseas but the home contingent is expected to rise.

The college offers a two-year course leading to a licence. Fees for the four-term year are £2,600 and likely to rise to £3,000. The mandatory grants will only cover £1,000 of the tuition fees, with maintenance means-tested in the same way it is for students at state universities and colleges. The decision is expected to cost about £250,000 a year. Buckingham opened the doors to its first students in 1976 and aimed to provide university level education outside state funding or control.

Professor Alan Peacock, the principal, said this week that although independence from the Government was central to the whole enterprise, the level of tuition fees, must deter some students from applying. The decision to allow students to be eligible for mandatory grants would mean therefore a lowering of the financial barrier.

A spokeswoman said this week that the decision would "provide fuel" for the long-term intention to seek a Royal Charter although it had not yet been going long enough to show a proven financial record.

Last year the college launched an appeal for £3m. So far £400,000 has been donated. The college now feels that a regular injection of cash, about £1m a year, would be sufficient to enable the college to expand, she said:

"The mandatory grant is only a small proportion of the fee charged and we feel that our basic teaching is not touched."

But what must concern the college is what might happen if the Labour Party returns to power and decides to reverse the ruling, particularly as they are concentrating much of their present thinking on primary education.

The spokeswoman said: "Obviously that has crossed our mind and I suspect that come that day we will have proved ourself beyond question."

Leader: page 7

Huddersfield poly feels draught of Kirklees' stringency

by Paul Flather

Kirklees Council made it clear this week that extra resources for Huddersfield Polytechnic would have to be found through internal savings and voluntary redundancies, but that under no circumstance would the quality and standard of courses suffer.

Councillor John Mernagh, chairman of the education committee and acting chairman of the polytechnic governors, said: "We are fully committed to supporting the polytechnic. We shall work long and hard to see it continues with its high standards.

"It is up to us to find the resources needed. But when the wind blows across higher education, the polytechnic will feel the draught," he said.

His remarks come a week after the Council for National Academic Awards wrote to him seeking an urgent meeting and warning that continued under-resourcing would require "action" to safeguard the interests of current students and of future applicants to Huddersfield.

Mr Kenneth Durrands, the polytechnic rector, has already warned that without more money from the l.e.a. drastic changes would have to be made inside the polytechnic. He has said that Huddersfield, one of the worst hit polytechnics in last year's capping of the AFE pool, needs another £1m.

Council officers are preparing a new budget for the polytechnic. Mr Mernagh said voluntary redundancies would be sought in the first instance. He also said he would be meeting with CNAA officers at the earliest opportunity to put Kirklees' side of the story.

He stressed that there would be no backing down on the question of the audit report, published at the beginning of the year, which alleged financial maladministration at the polytechnic.

● The report highlights a number of points that the council wants answers to." He welcomed the imminent appointment of a figure of public standing to review the findings of the report, and said the council would almost certainly stand by his review.

● Manchester Polytechnic has been asked to cut an extra £1,020,000 from its current burget as part of a £21m package of spending cuts approved by the full council to help stave off a financial crisis in the city.

British Council merger plan considered

Recommendations on a vice-chancellors' plan to keep the Inter-University Council intact as a recognizable entity despite merger with the British Council will be made next month.

Merger is now likely but the possibility of creating a new structure, which could include the polytechnics and the Scottish central institutions is being discussed by a working group of representatives from the Overseas Development Administration, the IUC and the British Council.

One of the fears of vice-chancellors is that absorption with the British Council would lead to direct Government control. In a letter to *The Times* this week, Lord Boyle, vice-chancellor of Leeds University drew attention to this aspect.

"It is imperative that if the initial benefits deriving from many years of trusted collaboration are to continue, some means must be found within the British Council for the relationship between the recognized IUC and its constituency, expanded to include the polytechnics as well as the universities, to continue in much the same way as it has done in the past unimpaired by the greater complexity and the political dangers of the organization of which it is to form a part," he wrote.

Lord Boyle of Handsworth: fears loss of controls.

The working group has been looking at four areas: the mandate that would be given to any new educational body; the way in which the contribution of the universities and polytechnics would be defined; financial support; and staff structure.

There is broad agreement that any new body should relate to a broader range of higher education institutions than in the past, which would make it far more effective in the Third World. To prevent the becoming cumbersome, machinery could be set up by which the institutions could elect a smaller body which would work with the British Council.

Hopes fade for teaching council

by Patricia Santinelli

The future of the recognition Advisory Committee for the Training and Education of Teachers is in more in jeopardy following the refusal of the Secretary of State for Education, Mr Mark Carlisle, this week to grant the National Union of Teachers increased representation.

The union's executive is to meet at the end of this month to decide on a plan of action. Up to now it has threatened to boycott the committee entirely unless it is given increased membership, a move which would reduce its validity.

Mr Carlisle in a letter to Mr Fred Jarvis, president of the NUT, has said that at the first meeting of the advisory committee will go ahead at the end of September regardless of whether the teachers participate or not, although he hoped they would.

This follows a deputation to Mr Carlisle at which the union put its case for increasing membership from the proposed two to at least four. It argued that two members could not possibly represent the divergent views of its large membership fairly and that this would jeopardize the credibility of the committee's standing.

In his letter Mr Carlisle queried why two members are not sufficient to voice the views of the union's membership, especially as they would be supported by two of the directly-nominated representatives who are serving teachers.

He stressed that to review the membership would mean further delay and risk upsetting the balance between unions and other teaching bodies, as well as between teachers and local authority organizations. He argued that the committee is an advisory body not a decision taking one and no votes are going to be taken.

● A radical drop of 30 per cent in teacher unemployment announced last week by Mr Carlisle has been decried as totally unrepresentative by the NUT which claims that the real figures of teacher unemployment are nearer 20,000 to 25,000. Statements that at June 1980 there were only 6,543 unemployed teachers as compared with 10,215 in September 1978 do not tally, it says.

NEXT WEEK

The state of English journals
Space, super-space, and the quantum universe
University College at Buckingham
Whisky-tasting in Glasgow
College mergers

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County backs poly charter call

by Paul Flather

Leicestershire County Council has become the first local authority to give the faintest nod of approval to the campaign by some polytechnics to gain charter status for their institutions.

The council's further education subcommittee last week decided that it would be prepared to play its part in any national exploration of the issue of charter status, a demand that has already been approved by Leicester Polytechnic governors.

The subcommittee has agreed to hold talks with the Council for National Academic Awards to see how charter status would affect the CNAA's own charter which governs the validation of all degrees in polytechnics.

But Leicestershire are quick to point out that they are not bidding to lead any national initiative. Mr Kenneth Taylor, a senior deputy director for education, said the committee were showing willing.

"We are keeping an open mind and one eye on the future. We want to ask questions to see if a system that has run for some 11 years might now be in need of changes", he said.

Charter or corporate status would have profound effects on the way polytechnics are funded, reducing the detailed control local authorities currently enjoy over the budget, and on the way degrees are validated, reducing the role of the CNAA.

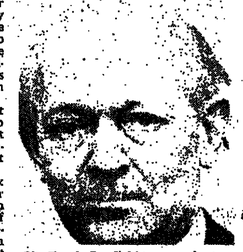
Leicestershire are primarily interested in the validation aspects of charter status. Not surprisingly, its decision was warmly welcomed by Mr David Bethel, director of Leicester Polytechnic, who has been in the forefront of the campaign forged by the Committee of Directors of Polytechnics in favour of corporate and charter status.

In what must be seen as another step towards enhancing the status of the polytechnic, Leicester has just appointed its first Visitor. Sir Arthur Armitage, who retires next month as vice-chancellor of Manchester University.

The Visitor, an honorary position more usually linked to universities who all have royal charters, will advise the governors and the director on academic affairs. "Sir Arthur will bring an experienced and objective eye to the polytechnic's affairs", Mr Bethel said.

Hatfield is another polytechnic which has also appointed a Visitor, a post currently held by Lord Todd, president of the Royal Society. He succeeded C. P. Snow two years ago. Students and staff can petition the Visitor on any matter relating to the polytechnic.

Third party enters dispute



Sir Frank Layfield: recognizance meetings.

Sir Frank Layfield, best known for leading the committee of inquiry into local government finance in the mid-1970s, has been appointed to try and resolve the long dispute between staff and governors of Huddersfield Polytechnic and Kirklees Council over the findings of an audit report.

Sir Frank will report in the first instance to Kirklees and then to the polytechnic governors. His first "recognizance meetings" will probably take place within the next two weeks.

Council officers were this week drafting a statement of work for Sir Frank. He will be asked to review the findings and methods of the interim audit report which became public last January and a second or full report that has not been made public.

Mr Eric Dixon, chief executive of Kirklees, said: "We think this is a first-class appointment. He is man of great standing. We hope very much for a resolution of the problem based on Sir Frank's recommendations, and the creation of a better atmosphere all around."

The appointment was agreed between the Department of Education and Science and Kirklees (*THES*, August 8) after the Secretary of State for Education turned down demands for a public inquiry.

Sir Frank will have to examine a sharply worded 43-page audit report that accuses staff of flagrant violation of the polytechnic's financial rules, of inadequate controls over transport, of poor purchasing policies, of not properly accounting for equipment, of over-ordering and in general of poor, sometimes non-existent internal control. The charges are all contested.

His recommendations will be eagerly awaited by all the other polytechnics, who believe they will throw new light on the complicated relations that govern relations between polytechnics and local authorities.

At a meeting early this week representatives of the polytechnic governors went some way towards reassuring officers of the Council for National Academic Awards that the viability of all polytechnic courses would be maintained under any circumstances.

Youthaid calls for urgent relaunch of programme

by Sandra Heimpel

The Youth Opportunities Programme should be relaunched as a matter of urgency if it is to avoid a complete breakdown, according to a pressure group for the young unemployed.

The conclusion is the result of two years study by a Youthaid working party, which is due to present later this autumn.

The working party, whose members included representatives from the careers service, Community Work Forum, an industrial training board and employers, heard evidence from a wide range of organizations and individuals.

"We have become firmly convinced", says the group's draft report "that the only solution available is to relaunch YOP as a fresh programme of vocational preparation and continuing education for all 16 and 17-year-olds who will be made available to every 18-year-old school-leaver who wishes to take up a place".

In the face of a massive growth in the 18 to 19-year-old unemployment, YOP will lose the credibility of politicians and young people and the active support of employers if it continues in its present form, the report believes.

The working party predicts a decline in the number of Work Experience places on Employers' premises schemes as unemployment rises. These places currently make up 65 per cent of YOP places.

Employers will be less interested because they will no longer be recruiting young people for their performance; unions and workers will resist the job substitution aspect of WEEP and young people will not want a scheme which no longer offers a route to permanent employment.

Calling for a new justification and set of objectives for YOP, Youthaid says that it must cease to be seen as providing short doses or work experience and training in job search and interview techniques to help young people quickly into employment.

"It must instead be seen as a 12-month programme of continuing education and vocational preparation which is available to every school leaver who wishes to take advantage of it."

The present range of places on YOP must be maintained but new ways should be found of making the whole range available to each entrant, who should then be able to negotiate a 12-month learning programme to meet their individual needs.

It should be a voluntary rather than compulsory system, the group says. It also wants to see the Unified Vocational Preparation experiment enlarged to guarantee training and education to all young workers. The two programmes should be developed side by side so that young people moving from unemployment into jobs

Discussing the case for Community Enterprise and Youth Enterprise schemes, the report says it is "romantic" and "wrong-headed" to believe that the young unemployed can create viable enterprises at a time when small enterprises are facing closure throughout the country.

Alarming device to stop nightmares

Freud said dreams were wish fulfilments; Jung claimed they were messages from our collective unconscious; and modern researchers even believe they are critical for our physical well-being.

And you can see their point. But for more than a million adults in Britain, nightmares are a major cause of discomfort and disruption. Fortunately, help is now at hand—from psychology researchers at Hull University.

Dr Keith Hearne has invented a device to wake up sufferers of particularly bad dreams—all you have to do is stick it up your nose and increased breathing rates trigger an alarm—"causing awakening and avoidance of the full nightmare experience."

Part-timers' row nears arbitration

by David Jobbins

Local authorities and lecturers' union leaders seemed no nearer agreement late this week on the longstanding dispute over the Clegg Commission's recommendation that part-time lecturers should be paid pro-rata rates.

Management officials and some union leaders were saying privately that if agreement was not reached at this week's meeting of the Burnham further education committee, it was almost inevitable that the issue would be referred to arbitration.

But Mr Peter Dawson, general secretary of the National Association of Teachers in Further and Higher Education, felt there was still scope for more discussion and that arbitration could be avoided.

In his April report Professor Hugh Clegg said that it offended the principles of comparability not to pay pro-rata payments to part-time lecturers.

Since then the two sides, while agreeing on the broad principles have been deeply divided over the practical steps needed to make the changes.

There are an estimated 50,000 part-timers of whom 1,000, many of them in the Inner London area, work substantial hours, up to 18 hours a week on hourly rates.

The local authority associations believe that the increases being sought by Natfhe—they estimate between 20 and 40 per cent—could kill large areas of adult education, where many part-timers are concentrated, stone dead.

While many education authorities recognize the justice of the case made out by the Clegg Commission, they are only too aware in the existing cold financial climate of cash limits that they simply cannot afford the escalation in costs that conceding pro-rata payments immediately would bring.

But there is a general acceptance by both sides that some degree of phasing must be applied. It is this that separates the two.

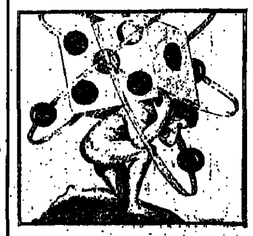
Management sources estimate that to concede the recommendation would add an average of 35 per cent to the part-timer annual pay bill of £60m.

Even limited increases the authorities are prepared to pay would add between 12 and 15 per cent.

Asked about allegations that Natfhe might be prepared to sacrifice some parts of the service to establish the principle of pro rata pay, Mr Dawson said: "Instructions of the association have been to seek pro rata salary arrangements. . . Obviously the negotiators are going to listen to all the recommendations during the negotiations and take a global view."

Contents

Other worlds



John D. Barrow reviews Paul Davies's stimulating and provocative new book on quantum physics, 11

English journals
Tom Cain surveys the profusion of academic periodicals dealing with English language and literature, 9

Academic freedom
Jan Szczepanski reports that in Poland academic freedom is seen more as a factor increasing the effectiveness of higher education than as a value in itself, 10

College mergers
John O'Leary looks at the lessons to be learnt from the mergers taking place between some small colleges and polys or universities, 8

Buckingham's future
Ngaio Crequer reports on the development of University College, Buckingham, the country's only private university, 7

Career structure
David Jobbins examines the problem of reforming the complex salary structure of polytechnic and college lecturers, 6

North American news 4
Overseas news 5
Books 11
Science books 11, 15
Noticeboard 16
Classified index 17

Opinion
Union view 21
Ted Wragg, Letters 22
Leaders (Overseas students, student union finances, Huddersfield Polytechnic) Steven Lukes 23

Blunt's resignation spares Academy

by Sandra Hempel

Professor Anthony Blunt's resignation from the British Academy this week has saved the institution from an embarrassing wrangle that had all the signs of developing into an acrimonious and lengthy dispute.

His critics now feel that justice has been done but Professor Blunt's resignation, following an appeal to him by the academy's president Sir Kenneth Dover, is regretted by his supporters, who felt that his spying activities were irrelevant to his academic achievements.

In his letter of resignation Professor Blunt wrote that leaving the academy was "the only way by which I could lessen the dissension which my continued membership has hitherto caused".

One of his supporters, Professor Alan Taylor, said that it would be "deplorable" if Professor Blunt had been pressurized into resigning. He had been the subject of a "witch-hunt by a handful of people", Professor Taylor said. "He was probably weary of all the fuss. I think he comes out of this matter extremely well."

Professor Blunt: wrote letter

Professor Blunt, the "fourth man" in the Burgess-Maclean-Philby spy ring, became a fellow of the academy in 1950. He has been stripped of some honours and awards, including his knighthood, following an announcement in the House of Commons last year.

Since then he has been the subject of growing controversy between members of the British Academy. The academy's council voted to expel him but at a recent annual meeting the members voted by 120 to 42 against expulsion and to go on to other business. An amendment deploring his behaviour was also thrown out.

After the meeting four members resigned, including Dr Colin Roberts, fellow of St John's College, Oxford, and others threatened to do so. Among those who said they would resign are Professor John Plumb, Master of Christ's College, Cambridge, and Professor Ian Christie, Professor of Modern History at University College London.

Lord Blake, provost of Queen's College, Oxford, one of the group who pressed for Professor Blunt's expulsion, said in a recent newspaper article that his supporters were influenced by the nature of his politics and the country for which he spied.

"Somewhere at the back of the minds of some of the elderly academics who voted against the motion was the question of what country was benefiting from Blunt's treason", Lord Blake wrote.

"I could not help wondering what would have happened if a fellow of the academy had been exposed as a former spy for Franco's Spain or Dr Strydom's South Africa or the Greece of the colonels. My guess is that a motion to expel him would have been carried with ease."

Following the defeat of the expulsion move, some of its supporters were pressing for a postal ballot of members on the grounds that less than half of them were present at the meeting.

Sir Kenneth Dover said that there was no precedent for such a move.

Air raid test shows it's not all-clear

A research aircraft belonging to Cranfield Institute of Technology is making regular flights to collect vital packages of that unusual material—air.

These strange missions are part of a test programme to investigate atmospheric pollutants produced by British chimneys which may be swept by prevailing winds to Norway and Sweden. These countries complain that recently their rain and snow has become more acid, causing harmful changes in soils, lakes and rivers.

Scandinavia blames this acidity on industrial emissions from countries including Britain and is pressing for closer controls on them. However, Britain's Central Electricity Generating Board maintains this would increase power costs by million of pounds—driving up fuel prices even further.

Now the board's laboratories have launched a programme to investigate long range airborne pollution—particularly the relationship between acid snow and rainfall and sulphur dioxide chimney emission.

As part of this research a Cessna Jetstream aircraft, fitted with apparatus which will separate and analyse water droplets from cloud and a detector to identify trace elements from chimneys, has been making flights over the North Sea and the English Channel to collect air samples.

While these measurements are being taken a harmless gas has been added to power station chimney emissions so that the plumes with identifiable tracer can be tracked as far as Norway. Extra navigation equipment has been added to planes to enable very precise position plots to be made while the sampling is going on.

Making the most of enthusiasm

by Patricia Santinelli

A great leap forward for education could be achieved by using the adult education service to harness the enthusiasm generated by educational and general broadcasts.

This is one way of maximizing the use of scarce resources outlined by Mr Colin Shaw, director of television at the Independent Broadcasting Authority, in an article on education and the broadcaster published this week in the IBA magazine.

"Too often viewers have been thwarted by the lack of opportunities for following up something either heard or seen which has aroused their interests", Mr Shaw says. "Yet the opportunities do or could be made to exist if we could manoeuvre broadcasts into a position to lock on to the adult education apparatus more effectively."

This would require a system whereby it became possible to identify from a mass of future plans which programmes, whether directly educational or general, could be exploited for such a purpose.

Mr Shaw admits that such an enterprise would pose practical difficulties.

"But we cannot accept this as an insoluble problem. We shall have to work out a partial solution, reconciling the indisputable need to leave editorial hands as unfettered as possible with a wider need to make the best possible use of increasingly expensive and scarce educational resources."

He does not believe this should be the exclusive form of educational broadcasting. "A different kind of service using more explicitly didactic approaches could be accepted for audiences in institutions. He thinks one should not dismiss the more valuable kind of programme which allows lengthy and close exploration of a particular subject.

"To speak talk about the educational needs of television, we are inevitably treading the murky edges of paternalism. But I see one powerful utilitarian argument for it because at a time when our society is undergoing great changes, the need to arouse new interests, to teach new skills takes on a special urgency", he says.

Study calls for positive discrimination for women

by Charlotte Barry

Every major city in Britain should have an independent and expert educational guidance service for adults and at least one return to study course. There should also be positive discrimination to attract more women on to TUC-sponsored courses, concludes a survey of educational opportunities for women in the Sheffield area.

The project, which was supported by a £3,000 grant from the Equal Opportunities Commission, was undertaken by three members of Sheffield University's continuing education division—lecturer Mr Nicholas Howard, Ms Lesley Fowler, and Ms Judith Bell who is now a senior counsellor for the Open University in its north-west region.

Its aim was to look at the extent and effectiveness of educational provision for women in Sheffield between 1977-78.

A questionnaire for women on TOPS courses sponsored by the Manpower Services Commission found that most of them had not attended any course since leaving school. More than a third married before they were 21 and 71 per cent were on a clerical or secretarial course.

Few had had any careers advice or educational guidance and had heard about the TOPS courses through the local press, friends, a college of further education or had received very basic information from the local jobcentre.

The report suggests that if TOPS funding were made available for full-time general education courses it would enable women to consider training for work other than in the traditional areas of secretarial work, catering and child care.

The researchers also focused on three return-to-study courses provided by adult education centres in Sheffield which concentrated on confidence building for women and the learning of study skills as a means of access to other educational opportunities.

More than half of these students had no qualifications when they left school and the majority had been given no careers advice there. Only 15 out of the 45 had been given advice on what course to take when returning to study.

Nearly half who completed the questionnaire had thought about taking a course in higher education but none had heard of the Joint Matriculation Board's mature matriculation scheme or knew that most polytechnics also operate some form of mature admissions policy.

The research reveals that women numbered only 33 (8 per cent) out of a total of 366 students on TUC sponsored courses run under the Employment Protection Act in Sheffield in 1976. Yet, in 1978 women made up 29 per cent of the national trade union membership.

The report points out that the main reason for the under-representation of women on these courses is because they are designed for shop stewards and safety representatives, and women seldom hold these positions.

Stop poaching members, TUC tells Nalgo

by David Jobbins

The TUC has told the National Association of Local Government Officers to stop poaching members of another white-collar union among the clerical staff at Ruskin College, Oxford.

Nine clerical staff who left the Association of Professional, Executive, Clerical and Computer Staff (APEX) for Nalgo must rejoin, the TUC's disputes committee has ruled.

And Nalgo must stop trying to organize clerical staff at Ruskin, added the committee, chaired by Mr Bill Keys, general secretary of the Society of Graphical and Allied Trades. The committee emphasized that its findings apply only to Ruskin and accepted that APEX had sole negotiating rights for clerical staff at Ruskin, and had majority membership in 1977.

APEX complained that Nalgo breached the TUC disputes principles by organizing activities at Ruskin and recruiting the nine APEX members despite its objections.

The disputes committee agreed that Nalgo had infringed the principles and said the union should cease its organizing activities at the college and exclude from membership the nine who had joined. The nine should be advised to return to APEX membership, it added.

£19,000 grant for historian

Professor Musgrove: gets award

A £19,000 grant to cover historical research into images of class has been made by the Leverhulme Trust to support work directed by Professor Arthur Musgrove, dean of arts and professor of history at the Open University.

The work will concentrate on images of class in contemporary Germany and will follow Professor Marwick's recent work on class images in Britain, France and the United States since 1930.

The Leverhulme Trust has also awarded the OU £50,000 for research into how outside bodies use the learning materials provided by its continuing education division.

Poly makes six into eight go

The problem facing North East London Polytechnic of how to fit its eight assistant directors into six jobs has been resolved without the need for an internal competition.

A reorganization of the polytechnic based on a reduction of its faculties from eight to six meant that two assistant directors, who are also faculty deans, would be without an obvious function.

The polytechnic had planned to involve the deans of the four most obviously affected faculties in a selection process in which only two could be appointed to the new jobs.

But before a meeting of the committee which was to carry out the operation, two of the four withdrew from the contest. The committee then simply decided that the others should be appointed to the newly constituted faculties. They are Dr John Radford, who will continue to be dean of the rearranged human sciences faculty, and Miss Jean Rossiter, who will be dean of the new faculty of arts. Miss Rossiter has been dean of the humanities faculty, which is destined to disappear in the reshuffle.

The committee was chaired by polytechnic director Dr George Brosan. He would not say what would happen to the two assistant directors who withdrew. "We made two appointments and the position of the other people will evolve", he said.

The polytechnic has deferred sending out notices of redundancy to 62 teaching staff until the end of the year while the response to a scheme for premature retirement compensation is evaluated.

Teachers consider alternatives

Unemployed teachers are to be encouraged to consider alternative careers through a new course being held in the autumn by Newcastle upon Tyne Polytechnic.

Mr Gilbert Scott, head of the polytechnic appointments service believes that a trained teacher can have much to offer any employer.

"Many teachers don't go after other jobs because they regard their experience as too narrow. This course will enable each side to find out about the potential of the other," he said.

The three day course which is sponsored by the Professional and Executive Register will run from September 22-24. It will include a half day "at work".

Part of the last day will be devoted to practice interviews carried out by graduate recruitment specialists by twelve employers covering careers in banking, building societies, insurance, careers work, housing management, retail, mail order, the sales, marketing and personnel sides of industry and journalism will also be taking part in the course.

Librarians who refused desk duty dismissed

Three library assistants with 36 years of service between them, have been dismissed from the School of Slavonik and East European Studies in London for refusing to carry out issue-desk duty as required by the head librarian.

All three, members of the Association of Supervisory, Technical and Managerial Staffs, have appealed against the dismissals. There will be a hearing before a subcommittee of the school's council on September 4.

The three are Miss Laura Gurdikyan, who joined the school in 1964, Mrs Janina Cunnelly, who joined in 1969, and Mr Saya Petr, who joined in 1970.

A fourth library assistant, Mr Boris Hornjak, who has also refused to carry out issue-desk duty, is currently on three-month sick leave. A fifth assistant, Mr Timothy Peinton, resigned from his post in protest at the way the library assistants were being treated in the school.

All five assistants complain that the requests from the head librarian, Dr Jolan Scroen, would demean the standard of their work and would affect their prospects for job advancement.

Miss Gurdikyan claimed she had been continuously harassed in her work and forced to do issue desk duty although originally hired as a specialist in cataloguing work. She said she had offered to do two hours desk duty a week but this had been refused.

In 1978 an operations and menegement study was carried out in the library. A recent reorganization of the library reduced the number of issue desks from two to one.

There are 13 staff in the library, which contains an important collection of documents and reference material including a highly valued collection of 19th century Russian literature. If the dismissals are upheld the case is likely to go before an industrial tribunal. ASTMS and the school have declined to comment before the hearing.

Body blow for Ulster university

by Paul McGill

In a bodyblow to the New University of Ulster the province's North Eastern Education and Library Board has told the Government it would prefer closures within universities or the Ulster Polytechnic to fundamental changes in the structure of the three teacher education colleges.

The board, Northern Ireland's largest education authority, makes clear it is referring to the Coleraine university in particular when it argues that "teacher training is of such importance that it should not be regarded as a bolster to the viability of any institution of higher education such as the NUU".

The comments were made in a submission on the Chilver report, which recommended two months ago that St Mary's and St Joseph's, the two Roman Catholic colleges, should merge and move to the site of Stranmillis, the state college, to form a new Belfast centre for teacher education.

Education represents about a third of NUU's work so its removal would be a crushing blow to the university, which already falls far behind planned group targets.

The board strongly criticises the fact that the review group chaired by Sir Henry Chilver had no representatives of Northern Ireland employers.

As it is, claims the board, the recommendations do not form any basis for taking decisions. It asks the Government to set up a representative committee to get to grips with the problem.

The submission, which was adopted by the board at its August meeting, also disputes the role mapped out for the Ulster Polytechnic. This institution should have influence in the training of further education lecturers but not teachers to be employed in schools in the fields of art, music, craft design and technology.

A deputation from the Social Democratic and Labour Party, which met Northern Ireland's education minister, Lord Elton, on Monday, voiced its clear opposition to the proposal to close the Catholic colleges. "In practical terms what the report offers to Catholic teacher education is 'protected species' status on a small reservation", it said.

It said the recommendations were "a legal and administrative monstrosity" and "a hamfisted attempt at social engineering". The deputation recommended that St. Mary's and St. Joseph's should amalgamate and offer degrees validated by Queen's.

It singled out the report's acceptance that in-service training should be cut from 3 per cent to 2 per cent, the failure to plan for any expansion in nursery education which "lags disgracefully behind the rest of the United Kingdom, the absence of a remedy through the acute shortage of teachers in science, mathematics and music and the dereliction of duty in failing to mention the need for remedial teachers".

Dr Thomas O'Finlch: warned of resistance.

So far, the debate on Chilver has not widened greatly beyond the issue of the future of the Catholic colleges. There is strong opposition from many Catholic representatives headed by the Primate of All Ireland, Cardinal Tomas O'Fiaich, who warned it would be met with "very strong resistence".

He said that the vast majority of Catholics would treat with the utmost suspicion any move which was likely to dilute the Catholic or Irish character of the training given to those who would teach their children.

The Irish dimension to the debate was repeated by the head of the religious department at St Joseph's, Dr Brian Brady, in a series of newspaper articles. Catholics with social pretentions, Protestant churchmen who wanted to promote false ecumenism and Marxists who wanted to wage class war were among those attacking the religious values of Catholics. But so too were unionists who saw Catholic schools as the main obstacle to "their goal of a monolithic unionist society", he claimed.

Dr Brady went on to argue that the Chilver proposals were in breach of the United Nations Universal Declaration on Human Rights, specifically the right to freedom of opinion and expression, the right to association, the right to education and the right to freedom of thought, conscience and religion.

Significantly, the almost entirely Catholic Irish National Teachers' Organization, the largest teachers union in Northern Ireland, gave its backing to the report and agreed that rationalization of provision was essential if institutions were to remain viable. The Campaign for the Advancement of State Education, the All Children Together movement, the Students' Council at NUU and a number of small political groups also supported the review group's recommendations.

NUS repeats call for guidelines on funding

by Paul Flather

The National Union of Students this week repeated its warning that confrontation on campuses over scarce resources was increasingly likely if the Government continued to avoid producing guidelines for new funding proposals for student unions.

The union is particularly worried that the autonomy of individual student unions could be threatened if funding is left entirely to local negotiation, as proposed in the new proposals which come into operation in 1981-82.

Those arrangements, which will mean student unions will compete alongside other departments and campus facilities for a share of the institutional block grant, were first announced by Mr Mark Carlisle, Secretary of State for Education, six months ago.

The NUS have repeatedly pressed the Government to issue guidelines to safeguard the future of student unions. In June the union presented officials at the Department of Education and Science with a list of detailed questions.

Ms Helen Connor, NUS treasurer, said: "We have not heard anything. We are now convinced that the DES itself does not know how the new system will operate at the local level."

She asked for guarantees on three specific areas:

- student union representatives should be given access to reserved areas of business because they would have to argue their case for funding at every level
- minimum levels of funding should be guaranteed as the bulk of union funds went on fixed costs, mainly staff salaries
- unions who had built up reserves for smooth trading should not be penalized.

The university sector would not be so greatly affected by the new proposals, although Ms Connor warned that some authorities were bound to take the opportunity to run down the level of student union funding.

At present student unions are funded through capitation fees calculated after assessing student union services and needs and paid through the grant awards system.

The NUS feels that the major problems will come in the public sector where the majority of local authorities will for the first time be put in a position to decide on funds for student unions.

"We will have to argue against the provision of nursery facilities or primary school education for example, which we think is an invidious and unacceptable position to be placed in" Ms Connor said.

Some authorities were bound to come down on student union funding, she warned. Dorset County Council has already said it will give a low priority to student union funding.

Meanwhile preliminary discussions between NUS representatives and Stirling University had revealed that any increase in student union funding would have to be offset against the hiring of an extra lecturer or porter, and the level of payments made to political societies and union campaign budgets.

The Council of Local Education Authorities is also concerned at a number of major administrative problems which have still to be resolved in the new proposals.

CLEA spokesman said association officers had met DES officials three months ago. But authorities still did not know for example how to compare students on advanced courses with those on non-advanced courses, home and overseas students, or those on discretionary or mandatory awards.

A spokesman for the DES said the matter was still under discussion.

Leader, page 23

State schools get more women applicants into Cambridge

by Ngaio Crequer

A male applicant from an Independent school is more likely to get a place at Cambridge University than his colleague at a state school, according to statistics published this month.

But slightly more state school women are getting places, despite fewer applications, and slightly fewer independent school women are gaining places although the same number is applying as in the past five years.

In 1980, according to Cambridge admissions staff, of applications by women for places in 1980, 49 per cent were from state pupils, and they formed 47 per cent of acceptances. This compares to respective average figures for 1975-79 of 51 per cent and 46 per cent.

Eighteen per cent of women applicants were from independent schools in 1980 with 19 per cent of acceptances, compared with 18 per cent and 22 per cent respectively for 1975-79. The direct grant figures were 16 and 19 per cent in 1980 and 16 and 21 per cent in the previous years.

The comparable figures for men show less change. In 1980 46 per cent of applications were from state school pupils, with 41 per cent of acceptances, the same as for 1975-79. Applications from independent school pupils formed 26 per cent of the total in 1980 with 32 per cent of acceptances, compared with 28 and 33 per cent respectively in the previous years. Direct grant figures were 13 and 17 per cent, compared with 14 and 18 per cent previously.

Tables also show the parental occupation, although they mean father's occupation, of the students, where there were slight changes in the years 1973-77. In 1973, 14 per cent of the parents (i.e. fathers) of candidates were classified as administrators and managers, 32 per cent as professional, technical, 28 per cent as other non-manual and 26 per cent as manual and agricultural. This compares with 16 per cent, 34 per cent, 25 per cent and 25 per cent respectively in 1977.

Between 1968-69, and 1979-80 there has been a sustained increase in the number and percentage of women students at Cambridge. In 1968-69 women formed 11.7 per cent of the total but now represent 26.8 per cent.

Art standards 'in jeopardy'

Standards on art and design courses are bound to fall if one-year foundation courses for art students are not formally recognised as an essential part of higher education, a polytechnic director has warned.

Mr David Bethel, director of Leicester Polytechnic and former principal of Coventry College of Art, said art and design courses, which contributed greatly to wealth-creation in the country, would need to contract to keep up standards.

He said the number and significance of foundation courses was being eroded because Local authorities could no longer afford discretionary awards for the courses and because of new courses sponsored through the Design and Art Technician Education Council.

The National Advisory Council for Art Education published a report 20 years ago calling for the introduction of a three-year diploma in art and design preceded by one-year diploma courses, later renamed foundation courses.

Mr Bethel said that ultimately he favoured a four-year art and design course in Britain, in line with the courses run in Scotland, the rest of Europe and the United States.

"If standards on these courses are not to be put into jeopardy, and there are still plenty of jobs for students completing art and design degrees, then foundation courses must be maintained", he said.

Students who complete a foundation course but do not go on to obtain a degree place are left with no qualification. Mr Bethel said the courses should be used by colleges to assess potential and by students to select the most appropriate course. They should not be used to remedy deficiences in secondary education.

Leicester Polytechnic, along with Manchester and Birmingham, has one of the lwgest departments for art and design, with 800 students attending BA and MA courses.

Training across the seas

A unique course to train university lecturers in South east Asia from Britain is being launched this autumn by Surrey University's institute for Educational technology.

It has been devised in response to demand from universities in Thailand, Malaysia, Singapore, Indonesia and the Philippines for teachers in higher education whose students are taking first degrees.

It will be taught through specially prepared materials including manuals, films and tapes with support from a personal tutor at Surrey and tutors in study centres in universities in South east Asia.

An annual residential seminar will be provided locally and the full diploma course in the practice of higher education is expected to take between one and two years to complete.

Pay award angers Scots

Scottish further education college lecturers' union leaders have accepted there is little they can do but to accept reluctantly their 14 per cent arbitration award.

Both the Educational Institute of Scotland and the Scottish Further Education Association are aware that further industrial action would be unlikely to improve on the award, which under the Remuneration of Teachers Act is binding on both sides.

The institute's general secretary Mr John Pollock described the award as "appalling" and attacked the arbitration finding reached by the chairman, Mr Norman Singleton, for being based on the England and Wales arbitration award which was not announced until after the Scottish unions had submitted their evidence.

The effect was that the supposedly independent arbitration process was merely an instrument of Government pay policy, Mr Pollock said.

The award was reached by Mr Singleton alone because neither the management nor trade union representatives on the panel could reach agreement. The unions had sought a 21.2 per cent increase to cover the rise in average earnings between April 1979 and April 1980.

The Scottish education authorities, despite their greater sympathies compared with their English counterparts, refused to improve their offer beyond 14 per cent. They claimed that average earnings had increased by 18.6 per cent

The institute regards the outcome as proof that the existing negotiating machinery is unsatisfactory and is calling for a full review to secure improvements.

The 1,700-member association, which has been at loggerheads with the institute, which has some 3,000 members in further education, over strategy, is using the anger arising from the imposed arbitration award as fuel for its call for a separate negotiating forum for further education.

Polytechnic sets up student charity

A financial aid fund for students registered as a charity, has been set up at Coventry (Lanchester) Polytechnic. Banks and local industry will be asked to support it. The fund is aimed at supplementing the student hardship committee and short-loan funds of both the polytechnic and the students union.

The new fund has four trustees but a committee representing staff and students will be responsible for allocating money to individuals in need.

Money will help those students who experience a significant and unexpected change in their financial circumstances which threatens their ability to continue their education.

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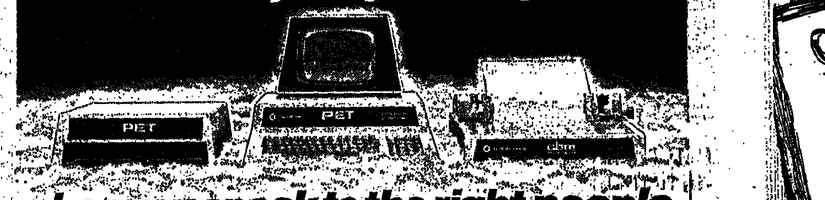

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North American News

Predictions raise spectre of teacher shortage

from Clive Cookson

WASHINGTON

Is the United States heading toward another shortage of new teachers? Faculty members at colleges of education are beginning to think so, and so are many, but not all, educational statisticians.

Two bodies produce national statistics of teacher supply and demand, the government's National Centre for Education Statistics and the biggest teacher union, the National Education Association (NEA). Both agree that at present there is still a large surplus of would-be school teachers, as there has been since about 1970.

The union's survey for 1979, just published, shows that the number of graduates who completed training for elementary and secondary teaching last year was 173,000. The total has been declining steadily from the all-time high of 317,000 in 1972. But the demand for their services has tumbled just as fast because of the falling school age population. The NEA says that about 77 per cent of those trained to teach will actually look for teaching jobs — 133,500 graduates altogether. They will be competing for only 74,750 vacant positions.

The association's statisticians foresee a substantial upturn in the number of teaching jobs from 1983, as elementary school enrolments begin to increase again. They now find themselves in a minority position in maintaining that teacher supply will remain above demand at least until 1988, when their projections stop. Nevertheless the NEA is no longer stating as boldly as it did two years ago that the supply of new teachers will be ample to fill all vacancies until the year 2000.

The National Centre for Education Statistics released new projections this summer, which show demand outstripping supply in 1985. According to the centre, supply will be only 80 per cent of demand by 1988. Just two years ago the American Association of State Colleges and Universities described a forecast of shortage by the late 1980s, made then by a private research organization, as "against all conventional wisdom". Now it is the no-shortage forecasters, like the NEA, who go against conventional wisdom.

Many professors in teacher training institutions believe that there are already too few new teachers in many fields and quite a serious shortage of mathematics and science teachers. For example Professor William Bennie, director of the educational placement service for the University of Texas College of Education, maintained that there was already an overall shortage: "We could place every graduate we have if they were willing and able to move to where the jobs are."

Arni Dunathan, professor of education at the University of Missouri, Columbia, asked 986 school superintendents in nine midwestern states about their teacher employment position and found that nearly half believed there was a shortage which should be remedied by an expansion of teacher training programmes.

The employment position of science and mathematics teachers is particularly controversial. "Perceptions of school, college and department of education faculty, administrators and education association officials indicate a dramatic problem is at hand, however National Centre for Education Statistics data contradict this perception, indicating instead a relatively balanced supply/demand situation troubled only by spot shortages", the American Association of Colleges for Teacher Education said in a bulletin to members.

The union, like the centre, does not believe that there is currently a shortage of maths and science teachers. Its new 1979 report said supply exceeded demand by about one third in both fields.

But many specialized and regional reports tell a different story. According to a survey by the American Association of Physics Teachers, 38 out of 40 state education departments believe there is now a shortage of physics teachers, which is "slight" in 23 states and "severe" in 14. Thirty of the 40 predicted a severe shortage by the late 1980s.

Education professors Larry Watson and Norman Anderson at North Carolina State University say that the supply of new science and maths teachers is "far below demand, both in North Carolina and the nation". They estimate the supply gap in their state at about 40 per cent.

Most teacher college staff agree on the main cause of the problem. As Michael Mahaffey, associate professor of mathematics education at the University of Georgia, put it: "It's difficult to encourage people to go into math education when industry pays twice or more what beginning teachers earn."

Peace study excites veteran campaigners

George Washington wrote in a circular to the states in 1783, "there can be little doubt but Congress will recommend a proper Peace Establishment for the United States . . .". He was wrong, but nearly 200 years later Congress did establish a temporary body called the United States Commission on Proposals for the National Academy of Peace and Conflict Resolution.

Fortified with a United States $500,000 (£250,000 approximately) budget and 15 full-time staff, the nine-member commission is spending this year investigating the need for, and feasibility of, a national peace academy. Despite its public hearings in 12 cities across the country, the enterprise has virtually escaped the notice of the American media. However, it has excited academics in the growing field of peace and conflict studies.

Not that everyone working in the area wants a National Academy of Peace and Conflict Resolution. The commissioners have heard testimony from scholars like Kal Schoenhals, associate professor of history at Kenyon College, who said any available funds should be spent strengthening existing institutions rather than building a large-scale academy. Another view, voiced for example,

Commissioner Elise Boulding (left) and two others hear the evidence

by Ronald Glosson, chairman of the peace studies programme at Southern Illinois University, Edwardsville, was that it would be better to create an international peace academy, perhaps under United Nations' auspices.

But a majority of the faculty members who run an estimated 80 peace studies programmes in American colleges and universities seem to be in favour of a free-standing National Academy of Peace and Conflict Resolution, financed by the federal government as a supplement to its five existing war colleges and four military academies. The leading academic proponents of this view are the famous husband and wife peace campaigners Kenneth and Elise Boulding.

Norwegian-born Elise Boulding, who chairs sociology at Dartmouth College, is the only female member serving on the commission. British-born Kenneth Boulding, professor of economics at the University of Colorado and the man most responsible for establishing peace and conflict as an academic field in the United States, is shouting encouragement from the sidelines. He believes the peace academy should be established close to Washington DC, associated with a major university, and "should combine teaching and research in the tradition of great universities".

Congress told the commission, which is chaired by Senator Spark Matsunaga of Hawaii, to assess the effects of a new academy on existing institutions of higher education and also to consider alternative approaches to the promotion of peace and conflict resolution, such as grants to existing programmes, or an international initiative. But when the commission produces its interim report at the end of this month, it is expected to propose an actual academy with educational and research functions.

The final report, with detailed recommendations about the shape and funding of the academy, is due by the end of the year. The commission has not yet considered how much government money would be needed to support it, but presumably the budget would have to be several million dollars a year. The Department of Defence spends that much in less than an hour, but, even so, Congress may be reluctant to create an academy that critics would unfortunately see as yet another unnecessary expansion of the federal bureaucracy.

Carter orders greater black participation

President Carter has ordered a government-wide effort to increase the participation of the United States' 100 predominantly black colleges in federal programmes.

His executive order makes Education Secretary Shirley Hufstedler responsible for implementing a initiative to "identify, reduce and eliminate barriers which may have unfairly resulted in reduced participation in, and reduced benefits from, federally sponsored programmes".

The education secretary is to set annual goals for each government agency, from the State Department to the Department of Agriculture, to involve historically black universities and colleges in its contracting and granting programmes. The order establishes an elaborate reporting procedure to make sure they keep up to their targets.

Mr Carter signed the order in showy ceremony on the South Lawn of the White House, at which he signed the order in front of an audience of prominent black Americans. Some cynical observers felt it was primarily a political ploy to help rally wavering blacks behind the President's re-election bid. If so, it succeeded in the case of Benjamin Mays, the doyen of black educators in the United States.

Dr Mays, who was president of Morehouse College from 1940 to 1967 and is still an active director of the United Negro College Fund, followed Mr Carter and Mrs Hufstedler on to the South Lawn podium and declared: "It is considered judgment that President Carter has done more for the black people of the United States of America than any President in the history of the United States — and that includes Lincoln."

President Carter said his order was a necessary follow-up to a memorandum he sent round government departments in January, 1979, asking them to do more for black colleges.

"We have added a modest increase (about US$30m) in the allocation of federal resources to the black colleges of our country," the President said. "I have not been satisfied with that progress. I want a person specifically charged with the responsibility of searching every possible way that your colleges can participate more fully in federal programmes — not just for education but in all federal programmes, to strengthen what you do, to give you a more sound economic status, and to give your students a better life in the years to come."

Education Secretary Hufstedler, who has been campaigning more actively for Mr Carter than most of his Cabinet, replied: "During the past year and a half, all the necessary data have been gathered. The full scope of the problem has been analysed, and agencies throughout the government have been made aware of your concern, Mr President. Now, with an order that carries the full force and effect of law, we look forward with confidence to carrying out your intention."

Doctor resigns in academic fraud row

The new chairman of the department of medicine at Columbia University has resigned, following accusations that he failed to deal adequately with plagiarism and falsification of data by a junior research partner at his old institution, Yale University.

Dr Philip Felig is the most prominent victim so far of what seems to be a growing incidence of academic misconduct in medical research.

A six-member Columbia school faculty committee recommended unanimously that Dr Felig "not be confirmed in his appointments as professor and department chairman, and director of the medical service at the Columbia Presbyterian Medical Centre." The committee accused him of "ethical insensitivity and the application of unacceptable standards to scientific research," which Dr Felig vigorously denies.

The details of the case, which were first revealed in a long article in the New York Times, are very complicated. Here is a simplified version.

Late in 1978 the New England Journal of Medicine sent Dr Felig a research paper for review and he passed it on to a junior member of the Yale medical faculty, Vijay Soman, for critical analysis. Without Dr Felig's knowledge, Dr Soman made a copy of the paper and, as he subsequently admitted, replaced portions of it and incorporated them in a paper of his own, which he and Dr Felig then submitted to the American Journal of Medicine.

The American Journal of Medicine happened to send the Soman-Felig paper for review to the researchers (from the National Institutes of Health) who had written the original New England Journal of Medicine paper. The researchers immediately spotted the plagiarism and informed the Journal. The editors agreed in May 1979 to an independent audit of the paper. However the audit was not completed until February 1980, a month after the American Journal of Medicine had published the paper, and after Dr Felig had accepted the Columbia appointments.

The auditor found that the Soman-Felig paper contained some original research by Dr Soman but it also included, but plagiarized material and some apparently falsified data. When Dr Soman was confronted with these findings he admitted plagiarism and "fudging" results to make them look better, according to the New York Times. He resigned and returned to India, his home country.

A second auditor then looked at five other papers by Dr Soman and was suspicious about the conclusions of two of them. That prompted Dr Felig and two other Yale researchers, who had published a joint paper with Dr Soman, to write to the journals in which they appeared, warning the scientific community about the doubts that now surrounded them.

By then the medical faculty at Columbia had become aware of the scandal, and they hurriedly set up an investigating committee that recommended Dr Felig's removal at the beginning of this month.

The committee made several serious charges against Dr Felig, who moved to Columbia to take up his appointments in June. In essence they boil down to the following accusations: that he did not tell officials at Columbia about the allegations against his paper with Dr Soman last year before his appointment; that he treated the whole affair far too lightly, did not investigate Dr Soman's work properly, and failed "to grasp the significance of incriminating facts" and that he allowed Dr Soman to visit Columbia in January 1980 as a candidate for an assistant professorship.

The documents obtained by the New York Times show that, before resigning, Dr Felig prepared a point by point rebuttal of the charges against him.

Dr Felig's former colleagues at Yale seem to share his view that his new colleagues at Columbia made unjustified accusations against him. They have welcomed him back to his old professorship there.

Biologist breaks clone guidelines

University of California biologist Samuel Kennedy set up an experiment to clone the rare sindbis virus. But, through an accident that has not yet been explained, he actually created another more dangerous virus, the semliki.

Dr Kennedy's mistake was the first such violation of the guidelines for cloning and recombinant DNA research laid down by the United States government through the National Institutes of Health.

Fortunately he was working in a high security biological containment laboratory at UC-San Diego, which is in fact suitable for cloning dangerous "Class 3" pathogen such as the semliki virus.

The work has been stopped temporarily while an investigation takes place, but unless gross negligence is proved, Dr Kennedy, who is British, is unlikely to be penalized.

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Overseas News

Ministers agree to planning links

from John O'Leary

COLOMBO

New moves to encourage universities to take a lead in non-formal education and to relate their work more closely to national planning and development are proposed in the final report of the Commonwealth Education Conference, which ended here last week.

Ministers from some 30 Commonwealth countries agreed to recommend a special meeting of experts and representatives of governments and universities to examine the possibility of more cooperation. As well as fostering more extramural activities for part-time students, the ministers hope a meeting of minds could lead to full-time courses more relevant to manpower needs.

Although the recommendation is only one of 97 made at the Sri Lanka conference, it is likely to receive high priority when the Commonwealth Education Liaison Committee, chaired by Sir Roy Marshall, vice-chancellor of Hull University, meets to agree a plan of action by the secretariat. The relevance of higher education and the increasing importance of non-formal programmes received particular attention during the conference.

Because of the vast spread of activities covered by the label of non-formal education, ranging from basic literacy programmes to specialist training programmes at sub-degree level, universally appropriate initiatives were difficult to find. The involvement of the universities was one of the few concrete proposals pertinent to the majority of member states.

In another attempt to link institutions of higher education with the needs of developing countries, the conference also recommended the compilation of a directory of courses and degree programmes in development studies within the Commonwealth.

Two more surveys are planned within higher education as part of the continuing work of the Commonwealth secretariat. The first will see the updating of previous work on the improvement of teaching in universities. Officials meeting in the first week of the conference recommended that the limited scope of the secretariat in dealing with academic questions made the continuation of this work inadvisable, but ministers were keen to see some non-development action proposed.

A more exhaustive review was recommended to reassess the operation of the Commonwealth scholarship and fellowship plan. It is 10 years since the last review and ministers wanted to see an evaluation of its success in meeting its objectives and of its relationship to other bilateral and multilateral schemes. A report will be prepared for the next Commonwealth conference in three years' time.

Among the concerns about the present operation of the plan was the low proportion of awards going to women. Throughout the 21 years in which the plan has operated, only 11 per cent of awards have gone to women and now scholarship agencies will be encouraged to nominate "an adequate number of women applicants".

There was general agreement that Britain had escaped lightly on the question of fees. Mr Mark Carlisle, Secretary of State for Education, promised nothing and yet seemed to satisfy at least most of the Asian representatives.

He was left in no doubt about the importance of British higher education to the Commonwealth, despite the absence of a number of the smaller member states, which inevitably rely most heavily on places for their students abroad. But there was no indication that the Government is prepared to make more than minor concessions in a year's time.

Mr Shridath Ramphal, secretary-general of the Commonwealth secretariat, said after the conference that the discussions had brought a recognition that, while the setting of fees was a matter for national governments, it did impinge on the vitality of the Commonwealth and the continuance of the close links built up by generations of young people.

Rather than seeing the erosion of the Commonwealth forecast by some, Mr Ramphal said the conference could well mark a strengthening of relationships born out of a recognition of their value.

Welfare spending cut back

from Lindsay Wright

WELLINGTON

Student welfare services, developed over the past 20 years in line with the recommendations of the 1959 Parry report on universities in New Zealand, have come under direct fire from the government with instructions that expenditure be cut by nearly two-thirds.

Hardest hit by this latest blow is Victoria University of Wellington where a comprehensive welfare service was built up only this year to help relieve the capital city's acute student accommodation problems.

Nearly a third of the money for the service goes towards the running of the university union building, and the remainder supports a team of three physical welfare officers, two counsellors, the careers advisory, the accommodation officer, three medical practitioners and a part-time psychiatrist, creche staff, a director of welfare services and supporting secretarial staff for a campus with 7,000 students.

Five years ago the University Grants Committee had recommended that universities consider the introduction of charges for welfare services and some universities followed this recommendation up with charges of between NZ$5 and NZ$8.50 (£2.50 to £5) a student each year. The new directive implies over a four-fifths reduction in direct support of the services from the university's income, which amounts to some NZ$53 (£26) a student each year.

Vice-Chancellor Dr D. B. C. Taylor has been asked by the university council to review the funding of the welfare services and has told staff and students that he wants to maintain the current level of services and that the tenure of existing welfare services staff will be respected.

Postgraduate pruning provokes professors' ire

from Guy Neave

PARIS

The latest decision of the Minister of Higher Education, Mme Alice Saunier-Seité, to cut back postgraduate studies is meeting with a groundswell of opposition from all quarters in the university world.

The Committee of University Vice-Chancellors (comité des présidents d'université) has come out strongly and, in an effort to counter the minister's mid-summer coup, d'état, called for an emergency meeting with Prime Minister Raymond Barre. Mr Barre, before he was appointed Prime Minister, was a professor of economics. The committee is on record as opposing the policy which hits the smaller universities hardest, poses a very real threat to fundamental research in universities.

Particularly galling to vice-chancellors is that the minister did not notify them of her decision, announcing it publicly. Nor did the minister's team of advisers allow them any opportunity of outlining their priorities and objectives prior to putting the latest cuts in operation.

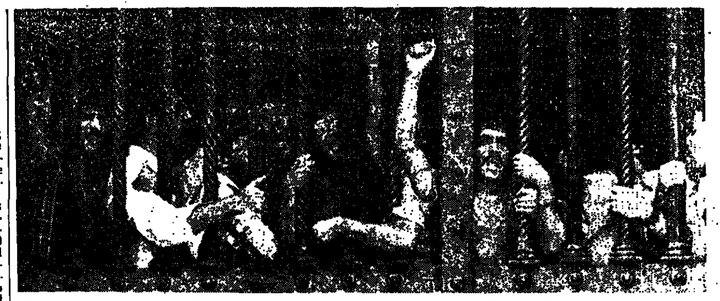
The cutback represents a U-turn in policy over the past decade. It undermines two of the most important planks in the development plan for higher education: the forging of closer links between university and community, to stimulate regional development; and between universities and technological development through the exchange of researchers with industry.

One area to be badly affected will be the central region of Auvergne. According to the president of the University of Clermont-Ferrand II, M. Pierre Cabanes, the non-validation of graduate studies in computer science, mathematics, physical chemistry and electronics will force students to study elsewhere. This in turn will accelerate the brain drain from an area whose industrial base is weak.

According to the sociologist, Alain Touraine, the present measures are designed to lay down a clearer line between what are held to be modern style but traditional universities dedicated to the priority of economic viability and cost effectiveness and others which, though more innovative, are concerned more with the economic and cultural life of their regions.

Such a policy, the Socialist Party spokesman on education, Louis Mexandeau has stated, is not just an issue of whether small rump establishments should be kept on in the provinces. It is also a policy which will aggravate the already marked disparities in access to higher education between the regions.

Students in mid study on a course whose validation has no longer been recognized, should appeal to the Conseil d'Etat, say lecturers. The Conseil d'Etat, as France's supreme court of administrative justice, has the power to reverse the minister's decision.



Iranian students barricading themselves in the entranceway of St Peter's Basilica to protest at the arrest of fellow students in Britain and the United States.

Iranian students stage Vatican protest

from Uli Schmetzer

ROME

The day the students of the Ayatollah Khomeini carried the Islamic revolution to the gates of the Vatican Italian officials learned that no logic is as powerful as illogic.

The "affair" began under the portico of Saint Peter's when 22 Iranians, allegedly members of the growing contingent of Iranians studying in Italy, stormed the sepulchre of the Apostle Peter demanding that Pope John Paul II intervene to stop Israel turning Jerusalem into its capital.

Burly Swiss guards and Vatican security police, aided by enraged worshippers, quickly subdued the demonstrators. They even managed to cut the chains of one hardliner who had handcuffed himself to an iron railing.

Struggling and invoking Allah and the great Ayatollah the students were carried across Saint Peter's Square and handed over to Italian police.

Later on the 22 issued a statement which said: "Thugs collaborating with Vatican police, all of them Zionist and American agents, have insulted Islam and the Ayatollah Khomeini. . . ."

By then embarrassed Italian police were already trying to be rid of the hot potato the Vatican had dumped in their lap. None of the 22 were charged, all were promised instant release if they would kindly give their names.

This is where the real trouble began. The 22 Islamic stormtroopers (among them two veiled women) were intransigent: "We are all called Ali," they chorused.

A night in the "cooler" did not dampen the revolutionary zest, stoked by the Iranian embassy in Rome which haughtily demanded the instant release of "our brothers and sisters".

Hastily shoved before a court next morning the 22 were charged with Article 495 of the criminal code referring to the withholding of one's true identity.

The magistrate, a kindly man probably briefed by a government painfully aware there are 6,000 Iranian students expected by the beginning of the next academic year in October, refused to sentence the nameless defendants.

The next step was an amiable Italian appeal to the Iranian embassy. The "brothers and sisters" would be released at once if the embassy could guarantee their identity. It couldn't.

At this stage police reluctantly proceeded to fingerprint and photograph the nameless demonstrators, not an easy task in the case of the two women who wore the chador (veil).

In Teheran meanwhile chanting student mobs continued to lay siege to the apostolic office of the Vatican while newspapers whipped up public compassion with hair-raising accounts of how the 22 brothers and sisters were locked in dirty cells with common criminals, yes, "even shut up in the prison lavatory".

To make matters worse the 22 went on a hunger strike. Not that it was the first time Italian authorities were subdued by an impromptu Iranian Ramadan. Last month 25 Iranian students at Perugia's university for foreigners went on hunger strike when the education ministry refused them permission to enrol for a course that had begun four months earlier.

Finns propose 'catch-up' course to bridge academic gap

from Donald Fields

HELSINKI

A Finnish Ministry of Education report proposes that Finns who graduate at Swedish universities and then return home should be given supplementary courses before they seek jobs.

Implementation of the proposal, which is based on evidence that Swedish degrees are of considerably lower quality than their Finnish equivalents, would be followed with interest in other countries experiencing substantial outflows of students.

Compared with the 82,000 undergraduates in Finland, there are about 5,000 Finns studying in Sweden. Many of the latter belong to Finland's 6 per cent Swedish language minority. But Finnish speakers are also able to put their extensive knowledge of Swedish to advantage on the west side of the Gulf of Bothnia.

A survey published in Akava, organ of the Central Organization of Professional Associations in Finland, shows that many Finns who fail to qualify for their own universities, with their relatively stiff entrance requirements, use Sweden as a second choice. Others are attracted by better job prospects and higher pay in Sweden after completion of studies. Following the imposition of a 10 per cent ceiling on the foreign student population in Swedish universities their numbers are likely to fall.

Officials anticipate that the homeward movement of Finnish graduates will peak between 1981 and 1984. During that period, it is suggested, social and natural scientists and technologists should be given extra instruction at Finnish universities specializing in their respective disciplines. For holders of Swedish BSc(Econ) degrees, 18-month courses in distinctively Finnish methods of taxation and auditing are proposed. Linguists, for whom demand is declining, may be recommended to supplement their degrees with a secretarial or "cultural" diploma.

Admitting that too little is known about Swedish standards in Finland, the report urges a speedy evaluation of the extent to which academic qualifications obtained abroad match the levels of competence required in public administration at home.

Deans oppose party politics in universities

from Emil Zubryn

MEXICO CITY

The annual meeting of the Association of Universities and Schools for Higher Education, celebrated at the Benito Juarez State University in the city of Durango, agreed that Mexico does need "dissidence" to strengthen its political ideologies and goals.

University deans, attending the talks stressed that while Mexican universities welcome "open dialogue" they stand firm against becoming targets for the Communist Party or any other group with overt desires to control higher education and use this for political ends and disturbances.

President Jose Lopez Portillo, who attended the event, warned that "political parties have no room in universities." This was the stand of the president, cabinet members, and such educated speakers as Guillermo Soberon, dean of the National University of Mexico, Hector Mayagoitia, dean of the National Polytechnic Institute; and Jose Hugo Martinez Ortiz, dean of the University of Durango.

The speakers were united in their condemnation and outspoken in their criticism of recent political agitation involving university students. The deans were fearful of the consequences of the merger of the University of Mexico Employees with the National University Employees' Union, and the recently announced threat by the latter organization of a nationwide strike that could paralyse all Mexican universities.

The consensus of opinion of Mexican deans was that "liberty is not libertine," nor does university freedom and autonomy spell weakness before subversion. The educators agreed that the infiltration of political parties into many Mexican institutions of higher learning will breed "trouble and not progress" with this reacting against the best interests of students and the long-range goals of the nation.

David Jobbins reports on career structure for college and polytechnic lecturers

The job problem that no-one will tackle

Two independent bodies have now shied away from taking a close look at the college and polytechnic lecturers' career structure.

The Clegg Commission examining the 1979 pay claim doubted whether the structure was the best that could be devised but added: "However we can do no more than voice our concern, for we lack the expertise and detailed knowledge which would be needed to formulate proposals for reform."

And the ACAS arbitration panel, asked to adjudicate on a wide range of improvements sought by the lecturers as part of their 1980 claim, said it could come to no firm judgment because "the problem is too complex".

Acknowledging that the Burnham committee was not the best place to carry out improvements which even the employers accepted were needed, the arbitration panel instead passed the buck.

It recommended that a third independent body should review the structure. Alert to the high cost implications of many of the proposals put forward by the lecturers' union leaders, the panel suggested that this would allow issues to be agreed in principle. Those involving additional costs could then be considered in future bargaining.

This move was welcomed by the National Association of Teachers in Further and Higher Education as "a welcome acknowledgment of the case we have made".

The union's general secretary, Mr Peter Dawson, said: "It is another occasion when an outside body has not been willing to make recommendations on the structural problem."

The foundation for the college lecturers' salary structure is a minefield for the uninitiated. Colleges are slotted into categories according to a formula for the number of student hours taught. The teaching hours are modified according to the type of student (full time, part-time, or block release for example) and then weighted according to the proportion of advanced work.

When the sums are done, colleges can be placed in one of 12 groups — from the smallest further education college with virtually no advanced work to the largest polytechnic with a vast range of degree and postgraduate activity.

This determines the point on the salary scale for principals and vice-principals; a similar calculation allocates individual departments to one of six grades which dictates the salary scale to be applied to heads.

■

Below head of department level pay is determined in another way. Each local education authority assesses the volume of work in each college at each of five levels ranging from the level 'or below' to higher degree.

Colleges then are authorized to create posts allowing more senior staff to be placed at higher levels in relation to the relative volume of work on more advanced courses.

Into the 1980 pay claim the lecturers' unions brought a wide range of imperfectly interrelated issues but in fact crucial and highly costly changes in this intricate structure. In general terms the lecturers sought more senior posts in less advanced work and a general blurring of the hitherto clear distinctions, which is the management's intention, which is resisting on its own, and which, I think, of the structure, denounced the lecturers' detailed claims as "a major attack on the basis of the existing pay structure."

If possible reforms emerge from this review, the employers would invite the union side to take part in a joint examination.

They told the arbitration panel: "In advance of that fundamental reexamination, significant alterations to the present system are likely to impede the introduction of a more satisfactory approach."

The changes sought by the union, where they could be costed, totalled over £64m—nearly 10 per cent of the pay bill—the employers calculated.

The major claim—financially and politically—was for automatic progression from the Lecturer 1 to the Lecturer 2 grade.

A major complaint lodged by the union over the years—and an issue which has roused bitter dissent within Natfhe—has been the numbers of lecturers "struck" at the top of the L1 scale.

According to Department of Education figures for March, 11,511 of the 24,176 lecturers on the L1 scale were on the top incremental point.

A further 10,000 were evenly distributed among the seven points on the scale immediately below the top.

The addition of one incremental point at the top of the scale last year failed to satisfy Natfhe: "It simply defers the problem by one year."

Its solution—automatic progression from the top of L1 to the L11 scale—would cost £34 million, the employers calculated. They maintain there is a definite need for two separate grades—and they quote the 1975 Houghton report's conclusion that the arrangement had "considerable advantages".

The union also sought a massive increase in the proportion of senior lecturer and L11 grade staff working in non-advanced further education. It argued that at the lower end some of the most demanding teaching was going perpetually unrewarded and that staff were being denied a proper chance of promotion beyond the lowest scales.

The union also wanted changes at the top of the career structure to bring lecturers in polytechnics and some of the colleges more broadly into line with the promotion prospects of their higher university counterparts.

Lecturers' leaders could see no reason why work acknowledged to be of university standard should be rewarded less well just because it was being done in the public sector.

The prospect of promotion above the basic career grade in the public sector compared most unfavourably with the chances of promotion from lecturer to senior lecturer scale in the universities. Fewer than 1 in 10 of existing SLs would ever attain principal lectureships, the union complained.

It was also dissatisfied at the lack of movement towards the Houghton recommendations for the use of academic posts above the Reader grade to match "personal chairs" in the universities.

But the management resisted this claim, saying that no serious justification had been advanced and that the creation of posts of Reader and above should continue to be left at the discretion of individual local authorities.

With a further batch of what the union described as "technical" points, it was little wonder that the arbitration panel, like the Clegg commission before it, backed grace-and-favour [illegible]

The commission [illegible] admission that it "lacked the expertise to do the job, and the arbitration panel's unwillingness to make any comments underline the difficulties which would face this as yet unconstituted independent body.

It is clear, however, that the management's determination that any structural improvements in the 1980 settlement would have to be bought out of the overall percentage award will be pursued with equal if not greater vigour next year.

With the growing impression that public sector pay generally will be tied to single figures—and Prime Minister Mrs Margaret Thatcher's alleged view that teachers must accept below the going rate next year because of their good fortune in 1979 and 1980, the money to meet this shopping list of demands is likely to be extremely limited and may lead to dissent within Natfhe over priorities.

A study in concentration: art students at work in one of Barry's summer courses.

Barry Summer School faces an autumn of uncertainty

Elaine Williams visits a popular 67-year-old institution for which time is running out

Barry Summer School in South Wales seems to reflect the worst of present trends in further and higher education. Where painters, photographers and musicians once met to test receptive students with the latest fashions of the art world, any flair is now soundly doused by financial constraints and the threat of closure.

For the Barry site, an annexe of the Polytechnic of Wales, is up for sale, and the summer school is now in its 67th and final year, at least at its present home. A drastic increase in fees has reduced a once-crowded student population of 900 to less than half that figure. Residential rooms lie empty.

Although the principal of the summer school Gwyn Lewis still boasts the best lecturers or professionals for the courses on offer, the college has been lying under a cloud of uncertainty for the past four years. This has broken the atmosphere of experimentation and progression which was so precious to the students and lecturers who attended it.

Heino Johanson, a photography lecturer at the London College of Printing has been returning to teach at Barry for the past 13 years.

"This place used to be so exciting", he says. "If anything happened in the art world then it happened here. The course used to be the cheapest in the country, but offered the best facilities and the best teachers. We had lots of art students coming here, refresher courses, lecturers, doctors, businessmen; but generally the people were younger. Now that the course fees have been increased and local authorities are no longer grant-aiding students to come here, people cannot afford to come."

Once the Glamorgan College of Education, built in 1905, the site sports solid red brick buildings with decorative stone portals overlooking the town and harbour of Barry and the Bristol Channel. With its swimming pool, bar, tennis courts, lecture theatres and [illegible] Barry provides a monastic setting at its best in educational facilities. But in the present atmosphere of scrimping and cut-backs even the best it seems must go.

The fate of the building as an educational establishment will depend on whether any education authority can afford the five to seven million pounds that is being asked for it by Mid-Glamorgan County Council, which owns the property. There are rumours that South Glamorgan or the Open University may put in a bid, but the county valuer does not rule out the possibility of a commercial company taking it over.

The site has been phased out as a full-time teacher training college over the last three years, and has meanwhile been used to house some full-time courses from the polytechnic mainly in social studies. These will be rehoused back into the polytechnic central site at Pontypridd.

A labour union council [illegible] Welsh language, adult [illegible] creative fashion design, a part-time teacher of adults course, [illegible] music and an Open University preparatory course.

Two years ago the courses for the summer school were [illegible] fortnight. This year they are [illegible] Mid-Glamorgan County Council [illegible] been told to meet the costs it has through the school, fewer people are being grant-aided by their local authorities to go there, and there is a feeling among tutors that it has reached the end of an era.

Bert Isaac, a painter and lecturer in art at the University of Leeds has returned to take the watercolour classes at Barry for the [illegible] time. Rod Harman and [illegible] Priddle from Hastings College of Further Education have come this year to take drawing and [illegible] native composition. Fred [illegible] Head of Photography at the London College of Printing, who has developed the photography course at Barry since 1958 is back again with equal enthusiasm.

It is not unusual for students to work 12 hours a day. Facilities are available round the clock [illegible] week the painting course [illegible] on an all night session.

Despite the decrease in numbers the Barry Summer School still retains its reputation and tradition and students and lecturers in the present session have stoically made the best of what is available. They are still pleased with the quality of the work that has emerged.

Mr Isaac of course regret the loss of the site with its seaside setting and educational facilities.

"It will be a pity for people of the polytechnic to go for their educational needs", says Fred Head from the LCP. "They will not recover a site like this again."

As far as the photography course goes, Barry, with its historic [illegible] tional seaside entertainment and local industry with the [illegible] by, is central to an [illegible] of different areas. The course offers large darkrooms [illegible] convertible science laboratories and between 40 to 50 enlargers.

The answer to this was to [illegible] the specialist for the course [illegible] recently the number of students was increasingly and publicity for the summer school was a [illegible] organic affair, mainly by word of mouth.

"The trouble with other summer schools is that the guest [illegible] tended to employ their own [illegible]", says Gwyn Lewis. "I try to get the best in the country, usually on recommendation. If I cannot get the right person for the course I would rather do without the course."

"For me it has been a delight to teach art on a course where there has been such a commitment to art," said Rod Harman from Hastings, and without the [illegible] of the art school. This place has tremendous reputation and influenced many people in the world. The layman [illegible] kind of work anywhere else. It would be terrible to lose Barry."

■

John Epstein, painter and lecturer at Morley College, London, was another lecturer at the summer School. Dylan Thomas gave a lecture there in 1948 and Ivor Cutler, avant garde musician and poet, added his own particular flavour by holding a course called *Music Poems and Humour* as well as attending the jazz course as a student. The jazz boasts as former teacher-musicians such as trumpeter Jackson Collins, and saxophonist Don Rendell. Each year the jazz section of the summer school still takes the produce of the work to Ronnie Scott's in London.

The Barry Summer School is held in two consecutive fortnightly sessions. It offers courses, apart from art, photography and jazz, in the

The language centre and student accommodation at Buckingham.

Buckingham takes a major step in the royal direction

Ngaio Crequer on the implications of Government recognition for a university born in a spirit of private enterprise.

For a university that was born out of a desire to shun state aid it is, paradoxically, the state that has given Buckingham the biggest and most significant boost in its still early career.

The decision by the Conservative Government, announced last week, to allow local education authorities to give mandatory grants to students at the University College, Buckingham uses financial resource to make a statement about educational facility.

It has given Buckingham official recognition without which, whatever the quality of the education it offered, its growth would always have been stunted. Its courses have in effect become validated by Government decree.

There is little doubt that the university will soon feel confident enough to apply for a Royal Charter, which would give it the legal right to confer degrees.

But it is over the first hurdle and several doors previously slammed hard in the face of Buckingham and its students are almost bound to start to open. What it took so called "state" universities half of years to achieve may be seized by Buckingham within a decade.

The University College at Buckingham was conceived as a private alternative to break the monopoly of state-financed universities. Independence from the state and state-established organizations and freedom to experiment with course structures and length were two early tenets.

The ideas began to harden and take shape in the late sixties to be succeeded by detailed planning and launches for funds in the early seventies. Professor Max Beloff the first principal, was a spirited publicist for the college and many still associate it with his name.

One of its early problems, which in some minds has not disappeared, was born at the very attempt. It was been lauded, and vigorously resented, a panel response to the sixties' student unrest, and a playground for the rich. "Equally it has been lauded by Conservative academics and politicians as a noble enterprise in free-thinking and private enterprise.

One of the more obvious differences about Buckingham is that with the exception of courses requiring a year's study abroad, the courses are spread over two rather than three years. Students attend for about forty weeks a year, split into four terms.

This caused problems when Buckingham decided in the early seventies to seek approval of its course in legal studies by the Council for National Academic Awards.

After lengthy consultation and review the Council expressed doubt that it was unable to validate any course for an honours degree on the basis of an eighty week, two-year programme alone. The reasons for their decision were not clear-cut as they also went on to say that they had no made a general decision against two-year courses of this kind but that they were not satisfied with the particular proposal, in that some of the eminent staff were retired and others, with university responsibilities, would only be able to give some of their time.

The whole situation was confused and frustrating for the college, and led to some rancorous exchanges in the press by participants and observers alike. From the beginning there had also been doubt as to whether the CNAA had the right and powers to examine proposals from such an unusual entity as Buckingham.

So in it own traditions of independence Buckingham went on alone. Its recognition would be won by the distinction of its academic staff it said.

■

The college has an academic advisory board which oversees its academic standards. It includes at least one former vice-chancellor and a present principal of a Scottish university as well as a host of well-known academics from this country and abroad. All courses and student work are also scrutinized by external examiners.

The Social Science Research Council, the British Academy, the Arts Council of Great Britain, the Anglo-German Foundation and the United States Social Security Administration have all asked Buckingham to carry out research for them.

In 1976 when the college opened its doors there were 80 students. There are now 375 and the ultimate target figure is between 500 to 600. Above that they say they do not want to grow. At 600 they would compare to about 10 per cent the size of the Buckingham population. There are five applications for each place.

Of all students, 25 per cent are from the United Kingdom, the rest from overseas and all pay £2,600 a year, increasing to just over £3,000 in January, the start of the next academic year. They say that the percentage of home students is increasing and expect that these will constitute about 35 per cent of the total student population next year.

The college, which is outside the Universities Central Council on Admissions, says that it is more flexible about entrance requirements than conventional universities. Although it looks for the two A level requirement it is more ready to take into account personal experience and other evidence of ability to study.

There are seven schools, Law, Economics, Politics, Economics and Law, History, Politics and English Literature, Accounting and Financial Management, Biology and Society, and European Studies, the last of which includes one year abroad. Students must study the life sciences and at least one foreign language.

Two years ago about two-thirds of all students were taking Law. Now it is 50 per cent as other schools are built up and Law loses some of its predominance.

The Law Society and the Bar Council were one of the first bodies to recognize the Buckingham "Licence" in the same way as they recognize a degree. Other professional associations, representing bankers and chartered accountants, do likewise but so far the Civil Service, Ministry of Defence and other Government departments have not, which has denied Buckingham students access to public service careers.

It may well be that the mandatory grants decision by the Government will lead to changes here as well. In fact the Civil Service Commission recently visited the college and is currently reviewing their position.

The problem Buckingham will always face is that its financial fortunes will depend on the market. Early this year it faced serious money problems and launched an appeal for £3 million. It attracted about £400,000 but now thinks it will need a lot less than once anticipated. One asset may well turn out to be the fact that overseas students at other universities now face similar fees to those at Buckingham, but Buckingham's courses are shorter. And mandatory grants for home students will aled help.

The Labour Party has yet to comment on the Government awards move but there will certainly be pressure from some of its members, if returned to power, to reverse the decision. It is a risk Buckingham thinks will fade as their credentials become increasingly established but it must create uncertainty as they try to build.

It was Margaret Thatcher, then in opposition, who opened Buckingham in 1976 and it is her Government that has followed that commitment through.

It may be opportune to remember now what she said then. She said there was no universal law that the pursuit of learning should inevitably be a comfortable and riskless engagement.

A relative indifference to cost was a luxury of easy times.

We may look to the University College as an experiment in thinking out in contemporary terms what is essential to education by contrast. Will what we have merely become accustomed to enjoy." Some may find those words full of foreboding.

Olga Wojtas distils the work of a team whose research has a distinctive flavour.

A spiritual calling

Most whisky drinkers have distinct preferences about which particular brands they drink. Many fancy themselves as connoisseurs, and indulge in esoteric comparisons between Macallans and Fettercairn Specials.

But trying to describe the differences in whisky flavours poses enormous problems. Descriptive vocabulary in the whisky industry is highly individualistic, and not only is it virtually impossible for distillers, blenders and consumers to communicate with one another, there is no guarantee that two people in the same company mean the same thing by the same word.

Matters are further confused by the widespread use throughout the industry of vague, wooly terms such as: "robust", "light" and "typical".

Now a team from Strathclyde University's department of food science and nutrition has drawn up a list of words describing every individual flavour likely to be found in whisky. While they accept their present list of 27 words may not be the definitive one, they feel they now have a system designed to cope with every whisky flavour, from neutral spirit through to malt whisky, and covering all the blends.

"The distillers do research, although they're reluctant to say anything about it publicly, but I don't think they've got as far as us," says Dr John Piggott, who is currently working on the project with Mrs Laura Hose. "They tend to be chemists, and I shouldn't think they take this sort of work seriously, since it's a mixture of psychology and statistics."

However, many whisky companies are also interested in research, and the Strathclyde team are now being financed mainly by the Scottish firm of Chivas Bros—although this does not preclude them from working for other companies.

The initial feasibility study, begun two years ago, produced a word list from three basic sources: a group from popular paperbacks about whisky, such as fruity and delicate; a group from the initial process, such as peaty, malty and grainy; and a group from chemistry, such as medicinal and acetic.

The team used the word list on a collection of whiskies with a panel chosen at random who had no background in the whisky industry, some of whom did not even like the stuff. While the panel did not agree completely with one another, they were able to pick out differences between whiskies, which the team knew were different.

The project has since evolved. Initially, the team helped to develop the panel's use of the words on this list, rather than imposing their own meaning on them. But after the process was repeated several times, and the word list altered accordingly, the team is now choosing chemicals which represent the words, and telling the panel this is what they want the word to mean.

However, by taking the initial approach of interpreting the words as the panel used them, the final list is very close to normal English.

Red lighting is now being used so that the differences of colour in the whiskies are not so apparent: people tend to associate a darker colour with an older (and presumably better) whisky.

"A dark shade can be very misleading", says Dr Piggott. "The darkest are not always the oldest. Most of the blends—and, I think, the malts, although nobody admits it—are coloured to a standard colour. Whisky's natural colour is light or dark straw. It tends to be orangey-brown if it's coloured."

And, despite being called tasters, the members of the panel are no longer permitted to taste the distillerions. Instead, they nose the whisky from tulip-shaped glasses which concentrate the aroma.

"We lose a slight amount of information through not tasting it, but people are able to get through much more without becoming incompetent or inebriated," says Mrs Hose.

Eventually the team hopes to be able to train groups within whisky companies to use their descriptive system, to enable distillers and blenders in different companies to discuss flavours accurately.

"Most companies have chemists, at least of sorts, who might have some influence on blending, but generally it's under the control of one person, and what he says goes," say Dr Piggott.

"Far too much is left to chance. If a company makes bad whisky it either gets stuck in the corner of a warehouse to see if it improves with age, or it gets gradually diluted with something else. But we can provide a technical system to design whiskies to have a particular flavour."

The team has already developed a quality control system for neutral spirit, where spirits with off flavours can be picked out and given to customers who will accept them: The next step is to use the system both in other quality control work, and to link it to marketing work. Until now there has been virtually no way of comparing the various whiskies on the market.

The team is also setting up an experiment comparing Japanese whiskies to Scotch and American brands, and monitoring the changes and evolution in the flavour.

"Whatever people say about the magic of Scottish water, the Japanese should be capable of producing a whisky that even a fairly discriminating person wouldn't object to. They've been comparing the flavour with chemical composition, but on a fairly haphazard basis," says Dr Piggott.

If the Japanese can produce a product indistinguishable from Scotch, he points out, then it is marketing which is going to count, and the British are notoriously lax on this score.

"The unions could help by putting more pressure on companies to use more technical expertise to find what whisky people want in new markets, and to push the companies to make it, instead of holding to the attitude that Scotch is best and people will drink it."

However, the team adds, that if the Scotch whisky companies do not finance them, they would have no compunction in looking to Japan for support.

"People think of whisky tasting as having to do with old-panelled rooms, leather armchairs, and smoking cigars", says Dr Piggott. "That may have been adequate in the past when whisky seems to have been more harsh and oily — and people drank it neat off the still—but we certainly don't regard it as adequate now."

Just testing: Dr John Piggott hard at work.

Avoiding the pitfalls of a shotgun wedding

As more colleges face mergers with polytechnics and universities John O'Leary looks at the lessons to be learnt from those taking place

The shotgun wedding has never been considered the ideal start to a happy marriage and there is no reason to believe that higher education should be exempt from this general rule. But, given the pressures on institutions, it is a condition likely to become more common in the next few years.

With financial stringency and rigid course approval policies threatening to squeeze the life out of some of the smaller colleges the option of amalgamation with a university or polytechnic is bound to be attractive when the likely alternative is closure.

Those faced with such a situation would do well to look closely at the small wave of mergers now going through as a result of the last round of cuts in teacher education. The pitfalls of the merger which amounts to a take-over by a larger, more powerful institution have been amply demonstrated.

Amalgamation is not a new experience for the former colleges of education, numbers having been drastically reduced during the 1970s, when local authorities carried out their own rationalization plans. The trend now is for colleges to university mergers, of which three are current: the College of St Hilda and St Bede joined Durham University last year; Shoreditch College, Egham, will become part of Brunel University next month; and Keswick Hall College is to be incorporated into the University of East Anglia in 1981.

With a further year in which to iron out problems before taking the plunge, Keswick Hall and UEA have been able to conduct their negotiations smoothly so far. The apparently excessive length of time the process has taken to reach a definite conclusion has been due largely to delays at Government level and both sides appear satisfied with the prospective outcome.

There has been assiduous consultation through numerous meetings of a joint college/university committee and careful monitoring of developments elsewhere, particularly in Durham. As a result, the college believes it has avoided the dissatisfaction evident at its two counterparts, although the crucial final stage of the process has yet to begin.

In the two other mergers, like others before, the bone of contention has been staffing levels. The number of jobs offered to the junior partner is almost bound to be a source of disenchantment, the more so when the background is one of uncertain student recruitment and tight financial control.

Crucial decisions came too late

This has been the case even in the most successful of mergers. At St Luke's College, for example, more than 30 of the staff were rejected by Exeter University on amalgamation, giving rise to admitted bad feeling among many. Professor Ted Wragg, who heads the new school of education, now looks back on a relatively smooth transition, having encountered few of the problems he had anticipated.

In a similar situation, St Bede's College, Durham, was forced to accept fewer posts than expected in the university's new school of education, and also failed to win its own way over the structure of the new BEd degree. Some staff at St Bede's would have preferred to pull out of the merger but the crucial decisions came too late in the process for this to be a possibility, coping with a row over the appointment of the authority's staff inspector to the new department; and the university has faced criticism both from the college and from its own staff on different points.

The college staff, having reached such a pitch of frustration that they voted unanimously to ask Dr Rhodes Boyson, under-Secretary for higher education, to intervene, are now resigned to accepting a *fait accompli*. They have been given only 14 posts in the new department, rather than the 15 they originally hoped for or even the 20 promised later. The number to be offered short term contracts to see out the University of London courses remained in doubt up to the last day of the summer term, as did the length of the contracts and the courses covered in them.

Doubts about staffing balance

Originally, 17 Shoreditch staff were offered one-year contracts in spite of the fact that the London courses still have two years to run. The situation had to be retrieved in new talks involving Mr John Bevan, further education officer of the ILEA, who faced some tough questioning at Egham on the authority's role in the merger arrangements.

Doubts persist about the staffing balance in the new department at Brunel. Only one specialist in wood has been recruited, for example, when this remains the most common specialism among school leavers studying design technology. Concern has been expressed by the conference of lecturers in craft and design education both over numbers coming from Shoreditch and the alleged imbalance of specialisms.

The target figure of 350 students now seems a pipedream, with fewer than 50 likely to form the first year of the new course, down more than 120 applications. Shoreditch had put much time and effort into promoting the college to ensure the largest possible proportion of the 500 to 600 A level students in craft, design and technology came to the college, but Brunel has so far rejected this approach.

There are also doubts about the compatibility of the main promotional thrust approach to the subject. Shoreditch has always been strong on craft skills while emphasizing the education content of its course. At Brunel is seen as a technology centre which may shift the emphasis towards engineering. The department's first head, Professor Benny Myers, fits into neither category with a background in design at the Royal College of Art.

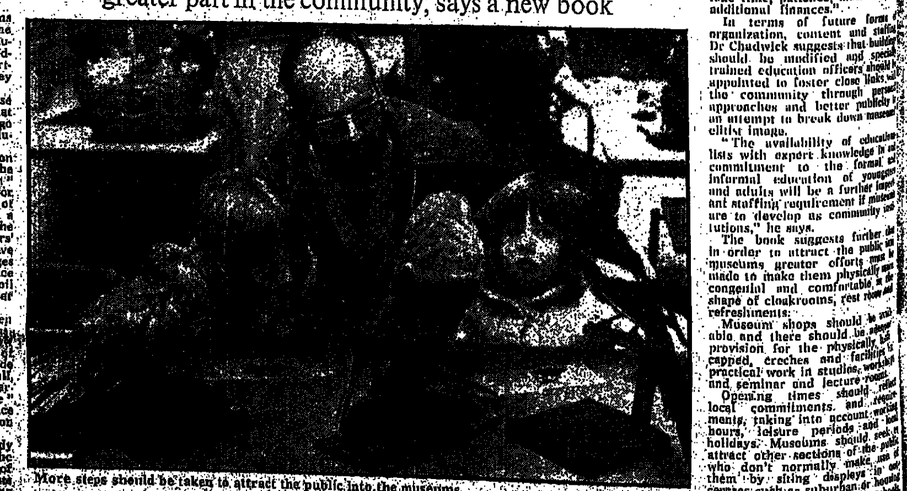
Dr Stephen Bragg, vice-chancellor of Brunel, is unequivocal in his support for the new department, believing that it will make a significant contribution to improving the shortage of teachers in an important subject area. But the slow recruitment both nationally and at Brunel gives little hope for the immediate future, which will mean difficult decisions on the planned expansion of staffing in the new department.

The Shoreditch experience illustrates the dangers small colleges will face if they or their maintaining authorities choose the merger route to survival in times of stringency. While there is no reason to doubt the university's good will, the merger arrangements have caused considerable frustration and dissatisfaction. The move which was expected to revitalize an ailing subject seems to be having the opposite effect on the moment.

With much the same story of evidence at Durham, there is obvious warning signals for other tempted to look for mergers. Often there is no alternative and the partners make the best of a difficult job, but it takes a diplomatic and academic miracle for the process to be completed to everyone's satisfaction.

A new future for the past

Museums and galleries must change their image and play a greater part in the community, says a new book



More steps should be taken to attract the public into the museums.

Museums and art galleries should become far more dynamic and innovative and pay attention to a far greater number of people.

They must not avoid controversial issues and should act as pacesetters by constantly confronting their public with themes relevant not only to the past but also to the present and the future.

These are the main conclusions of a new book on the role of the museum and art gallery in community education by Dr Alan Chadwick, deputy director of the department of adult education at Surrey University.

The purpose of the study arose out of the sobering observation that conclusions drawn 50 years ago about the role of museums in education may still be relevant.

A 1931 Board of Education pamphlet concluded: "It may be suggested that the word "museum" is portrayed in part responsible for the present unsatisfactory state of affairs. Does it not suggest a depressing, decaying institution, the last resting place of travellers' mementos and of fossils, which have undeservedly survived from ages ago? It clearly exists prejudice is clearly rooted in the tough soil of our language and in the popular mind."

Reports published since then have come to similar conclusions. Dr Chadwick's study, which has been sponsored by the Museums Association, notes that despite the constant demands being made to change the image of dull, depressing sepulchres (or "chamber of horrors" of doubtful evidence, as Sir William Flinders Petrie once called them) into centres of action concerned with community needs.

Dr Chadwick's exhaustive study looks at the present function of the museum and at policy in terms of community education and suggests changes in organization and staffing that can help it play a fuller role.

The recommendations are based on a survey of the civic museums of Derby, Leicester and Nottingham, a questionnaire sent to a sample of adults living in the three towns and interviews with museum directors and visits to their institutions.

The questionnaire revealed that members of the community wanted to play a more direct part in the affairs of their civic museums together with better publicity of museum activities and some greater indication of community involvement. They believed strongly that there should be no charge for admission.

Looking at the present function of museums, Dr Chadwick discovered that most recognized their educational importance and thought they should be making a positive effort to help people use their leisure time more profitably. But although community needs have been identified, plans for action have gone largely unheeded in the past.

This is because they have been hidebound by precarious funding methods which include no direct grant from central Government. Local government reorganization has not generally provided the financial backing hoped for and this has prevented them from being innovatory.

Most museums suffer from a chronic lack of exhibition and extra space, which means that many of their collections are in permanent storage. In addition there is a shortage of staff and training is seen as a major problem. Staff often feel they should be increasingly concerned with the community in general rather than sectional interests; there is a parallel fear that their autonomy might be threatened by combination with other agencies such as local education authorities.

In making his recommendations Dr Chadwick points out that the role of museums and art galleries will depend to a large extent on Government policy towards the Arts in general and museums in particular. Greater attempts should be made to receive their financial slight through a "Housing the Museums Fund" which would empower Central Government to make grants of up to 50 per cent for certain projects in selected museums. It is crucial that museums should create a new image," he says. "This will take time, patience, much skill and additional finances."

In terms of future forms of organization, content and staffing Dr Chadwick suggests that buildings should be modified and specially trained education officers should be appointed to foster close links with the community through personal approaches and better publicity in an attempt to break down museum exclusiveness.

"The availability of education lists with expert knowledge is a commitment to the formal and informal education of young people and adults will be a further important staffing requirement if museums are to develop as community institutions," he says.

The book suggests further that in order to attract the public museums greater efforts must be made to make them physically more congenial and comfortable in the shape of cloakrooms, rest rooms and refreshments.

Museum shops should be available and there should be some provision for the physically handicapped, creches and facilities for practical work in studios, workshops and seminar and lecture rooms.

Opening times should reflect local commitments and requirements, taking into account working hours, leisure periods and holidays. Museums should seek to attract other sections of the public who don't normally make use of them by staging displays in housing centres such as suburban or housing estate community centres, schools, hospitals, libraries and prisons.

However, all this will depend ultimately on the willingness of museums to adapt to the cultural, social and educational levels of the community in accordance with the type, nature and range of their collections.

Charlotte Barr

The role of the Museum and the Gallery in Community Education by A. F. Chadwick, published by the Department of Adult Education, University of Nottingham, £4.25.

In our continuing series of articles on academic journals Tom Cain inspects the huge range of publications serving the field of English Literature and Language

The plant and the industry: a question of priorities

Writing in the first number of *The Literary Review*, one of the new reviews that sprang up during the absence of the *TLS*, Anne Smith attacked the state of English studies, and of the academic periodicals associated with them. The academic study of English literature had, she argued, "grown so far from its parent plant, the sheer enjoyment of reading, as to have become a sterile and unrecognisable hybrid." Scholars and critics had taken from Leavis his elitism, but not his fierce commitment and sense of moral purpose; the great writers had become great "industries" out of which academic careers could be made, while other careers were made by setting out to monopolize an obscure corner of literary history and to publish as much as possible on it. Hence, she argued, "What was once a common pursuit in which all the intelligent reading public could share has become a stagnant area of dusty specialization, the language of which has, ironically, become less and less a language of communication, more and more an exclusive jargon."

It is the kind of attack that geophysicists or historians do not have to face, and it usefully reminds the scholar of literature of the peculiar difficulties and responsibilities of his subject. But is it true? Does a survey of the academic periodicals (I exclude the "little magazines", and review organs like the *TLS*) bear out the charge that the academic study of English has become divorced from literature as a living force, that neither criticism nor scholarship are motivated by love, enthusiasm, or the disinterested pursuit of learning, but by a blind and bloodless academicism that could (to borrow Anne Smith's example) employ itself as readily in the *Pigeon Fancier's Gazette* as in *Essays in Criticism*? If promotion, tenure or fame lay in that direction? The answer, I think, has to be "No", but a "No" that comes with a little less confidence than one could wish.

I do not want to seem to be reflecting the charges too complacently. There are certainly too many articles in the periodicals which are merely contrived, the answers to questions which no one has asked, or is ever likely to ask, and for which one can see no other motive than a desire to appear in print. There are certainly too many of which one would want to say, not that they are written in an exclusive jargon, but that they are so badly written that it is impossible to believe that their authors could ever have had any very serious contact with literature. But these, while too many, are still only a relatively small proportion of the thousands of articles and reviews that appear each year in the English periodicals (I use the word here and throughout to describe the subject, not the country, although it is on the British periodicals that I will largely be concentrating). The motivation for many other articles is no doubt careerist in part, just as the motivation for some well known playwrights and novelists was to make a living; but if the pressures of the academic world push some people, in England as well as America, to publish when otherwise they might not have done, this might be no bad thing. Certainly it does not follow that what they publish does not grow out of enthusiasm for their subject, and ultimately out of a commitment to literature that does not allow them to forget "the sheer enjoyment of reading"; nor should we make the mistake of confusing scrupulous scholarship with a lack of such commitment.

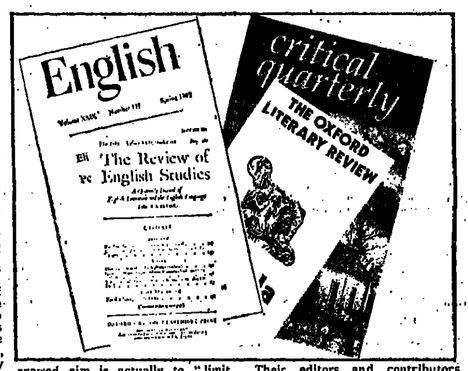
Even the establishment of a critical and scholarly "industry" around an author does not preclude the possibility of criticism and scholarship continuing to play their proper roles, though it undoubtedly makes it more difficult, with the danger of scholarship descending to more and more trivial levels, and of criticism finding that there is little of importance left to say in the way of interpretation, while critical evaluation has been largely preempted by the very existence of the "industry".

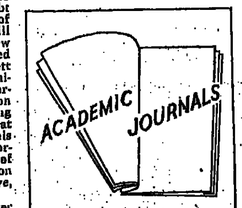
It is for this reason that the group of periodicals which comes nearest to fitting Anne Smith's unflattering description is that which serves the "industries" built around certain authors. Even here though, one feels that she may be writing off very sound *Shakespeare Survey*, which has been published annually from the Shakespeare Institute since 1948, and the two American periodicals, *Shakespeare Studies*, also an annual, and *Shakespeare Quarterly*. The latter, from the Folger Library, adds to the usual mixture of articles and reviews notes on productions of the plays, and an annual bibliography.

Shakespeare can in fact support this kind of intensive academic study with extraordinary ease, and apparently *ad infinitum*. The shoulders of Chaucer and Milton are also easily broad enough to bear the weight of the *Chaucer Review* (Pennsylvania State University) and *Milton Studies* (University of Pittsburgh) without one feeling that one is looking in on an uncritical, self-perpetuating industry that has lost sight of its true aims. Slight doubts on this score begin to arise when one moves on to the glossy *Keats-Shelley Journal* (published since 1952 by the Keats-Shelley Association of America), whose contributors are only rarely moved to doubt about the literary achievement of their subjects; they increase still more when one arrives at the new *Journal of Beckett Studies*, based on Reading University. The Beckett industry as represented here exhibits no real sense of critical perspective; in fact, the main objection to thus institutionalizing a living author, of whatever stature, is that it tends to cut him off from his predecessors and his contemporaries, enclosing him in a shell of largely deferential interpretation which, however just and sensitive, exists in a critical limbo.

There are for this reason fewer objections to be made to such journals as *The Dickensian*, which also has the advantage of being somewhat less pretentious in its format and presentation. This lack of pretentiousness is what often saves the growing number of newsletters: they are all frankly "professional", existing only to let a small body of scholars cultivating a particular corner of the garden of English studies know what their fellow scholars are doing. In some cases they are patently uncritical and over-specialized, but as long as they remain modest tools for research, as long as they exist merely to give notice of what has been published elsewhere and to exchange minor items of information, they have a useful role to play. The American *Seventeenth Century News* is a good example of what a newsletter ought to be: like most newsletters, it publishes reviews, short notes and abstracts of articles. It does not try to pad these out with longer, more pretentious articles, and since it covers an area of great richness and diversity it can hardly be said to be narrowly specialized, an accusation which could more reasonably be levelled against *The Wake Newsletter* or those (there are more than one) devoted to C. S. Lewis.

There is a marked tendency in more substantial periodicals to move towards specialization in a rather different way, by devoting the whole of a single issue to a particular topic. The *Yearbook of English Studies*, published by the Modern Humanities Research Association, has done this since 1978, with issues so far on American literature, theatrical literature and literature and its audience. The avowed aim is actually to "limit the proportion of more narrowly specialist material" and to reach a wider readership. Although focusing on a single topic can hardly be said to have done the former, it may well do the latter by giving a coherence formerly lacking, although it means that what we are dealing with is now as much a book as it is a periodical. Nottingham University's *Renaissance and Modern Studies*, another annual, has also gained from grouping articles around a particular theme or period, notably in its recent "Renaissance and Reformation" number. In America, Rice University's *Studies in English Literature* (SEL), which already confined itself to the years 1500 to 1900, has adopted the same policy, while many other journals publish occasional "special numbers" on a particular author or topic much more frequently than used to be the case.





Some of these, like the two issues devoted recently to Bellow and Nabokov by *Modern Fiction Studies*, exemplify the same tendency to turn contemporary authors into subjects for an academic industry, rather than criticism, to work on as do such things as the *Journal of Beckett Studies*. But this is by no means always the case: recent issues of *Victorian Studies* devoted to "Victorian Leisure" (autumn, 1977) and of *Critical Inquiry* to "Language and Images" (spring, 1980) show what can be made of a more imaginatively conceived special issue, while one of the best collections of essays on Hardy is still that to be found in the issue of the *Southern Review* that concentrated on him in 1940.

Mention of the *Southern Review* is one to remind us that it is not only the academic periodicals that go in increasingly often for special numbers: in England *Agenda* and *Stand* are "little magazines" that do it frequently, but perhaps the most striking example in recent years of a whole issue of a periodical given over to a single theme was that of the poetry magazine *PN Review*, in a defiance of the Prayer Book. What was interesting about this was that it was precisely the sort of topic which one would have hoped to find some discussion in the academic periodicals also. It would almost certainly have received lengthy attention in *Scrutiny* or *The Criterion*, or in any of the great nineteenth-century periodicals, but (though I may have missed it) I have seen no mention of it so far in their more academic successors.

Their editors and contributors may, of course, feel that the Prayer Book was already dead, or that its demise was merely a matter for the Church of England. But one doubts if this is the case: the reason for the silence of the academic literary periodicals in the face of what was generally felt to be a philistine blow to the literary culture of which their contributors are supposedly the guardians is more likely to be that it was not felt to be a strictly "academic" issue. Perhaps it would be too strong to call this a "trahison des clercs", but there can surely be no question that it is a weakness that the largely uncommitted ethos of the academic periodical works against it engaging with literary issues that have the kind of wider cultural implications that the Prayer Book controversy raised. They rarely have an editorial, or any other section in which such issues can be aired, and contributors often have to wait so long before their contributions are printed that discussion of current problems is impossible.

The suggestion of a somewhat complacent academic isolation from the culture in which the literature on which they are based has its life returns once again to the question of over-specialization. The main ancestors of the modern English periodicals, the great journals of the 19th Century, were very clearly neither specialized nor isolated. Indeed, the material they published was so diverse that they were not strictly speaking literary journals at all: periodicals like *The Edinburgh* and *The Quarterly*, *The National*, *The Westminster*, *Blackwood's*, *The London Magazine*, and *The Athenaeum*, aimed at a sophisticated if often partisan treatment of issues of current but not transitory importance, and addressed themselves to a correspondingly sophisticated audience. It may be that that audience has been idealized by some modern scholars, but in however imperfect a form it clearly existed in a way that it does not today. The range, length and quality of the articles which it was offered was quite unlike that offered by any modern counterpart. Indeed, what is modern counterpart, for the periodicals that have succeeded them have in almost all cases grown more and more specialized or more journalistic, literature becoming either their whole raison d'être or being relegated to short reviews in the small print of the last few pages.

The movement towards specialization, but still not isolation, is already evident in the two most famous periodicals of the earlier part of this century, T. S. Eliot's *Criterion* (1922-1939) and F. R. Leavis's *Scrutiny* (1932-1953), both of which were more exclusively literary than most of their predecessors. *Scrutiny*, arguably the most distinguished and certainly the most influential literary periodical since the *Edinburgh* and the *Quarterly* were in their heyday, contained more criticism, and less poetry and creative prose than did *The Criterion*, which published work by Eliot, Lawrence, Joyce, Barstow, Pound, Wyndham Lewis and Auden as well as by Eliot himself. In this sense, in its close relationship to the Cambridge English Tripos, and in the nature of its audience, *Scrutiny* might be said to be the more academic of the two, though the adjective is not one its editors would have welcomed unequivocally. Dominated as it was by a great critic who had learnt from Arnold as well as from Eliot, and who grew if anything more and more preoccupied with the decay of the culture in which he believed so passionately, it was certainly never academic in the sense of isolating the study of literature from the society in which that literature had its continuing life.

Scrutiny has had one or two direct descendants: the short-lived *Human World* (1970-74), founded by Ian Robinson, was fiercely Leavisite, and somewhat broader in its range than *Scrutiny*, but never really approached the same distinction. *Cambridge Quarterly*, founded in 1965, is also very close to Leavis in its values, and though it has made a conscious effort to avoid being seen as simply a continuation of *Scrutiny*, it inevitably has an air of predictability, of *de ja vu*, about it. Two of the leading British periodicals, *Essays in Criticism* and *Critical Quarterly*, are in their different ways more distantly related to *Scrutiny*. *Essays in Criticism*, founded in 1951 by F. W. Bateson, was quite explicitly conceived as an Oxford counterpart to the Cambridge based *Scrutiny*. Bateson's aim was a critical journal which was also based on solid scholarship, half-way, as he put it, between *Scrutiny* and the *Review of English Studies*. It has, on the whole, been a success, though not one on the scale of *Scrutiny*. It has high editorial standards which mean that although it follows no particular line, political or critical, it is probably the most widely respected of the British periodicals. Apart from the usual long articles, it has the virtue of publishing more thorough reviews than most, and a "Critical Forum" section which allows for debate of issues raised in previous numbers. This last frequently elicits the most interesting contributions of all, as for example in the case of Quentin Skinner's excellent recent discussion of Raymond Williams's *Keywords*.

It has always been common to be slightly patronising about *Critical Quarterly*, presided over by C. B. Cox, perhaps because it has often had at least half an eye on the undergraduate and even sixth-form reader. This attitude has, I think, become much more justified over the last two years than it ever was earlier, when, concentrating largely but not exclusively on the state of modern English literature, it published a good deal of fine poetry, as well as essays and reviews of a high standard, and gave a stronger impression than any of the other British academic periodicals of having its fingers on the pulse of contemporary literature. Since 1978, however, it has returned to its original aim of reaching a wider audience outside the universities, and has addressed itself to "sixth formers, their teachers, and undergraduates". It may be that the editors are right in thinking that there is a need for such a journal, but the simplifications which seem necessarily to accompany the new policy mean that the sixth formers' gain is the more advanced reader's loss. *Critical Quarterly's* change of direction leaves a substantial gap in the range of the British periodicals.

A journal of considerable distinction which has survived largely unchanged for rather longer, and which has nothing whatever to do with the *Scrutiny* tradition, is *Notes and Queries*, founded in 1850. Now in its 225th volume, it has become more exclusively English-orientated over the years, losing a certain amount of spleen and eccentricity in the process (here too one sees the move towards specialization), and now appearing six times a year instead of once a week, as at first. Throughout its long career it has accomplished efficiently the one valuable task of the various newsletters have grown up to fulfil: the exchange of scholarly information in short, unpretentious notes, or more a provision of short

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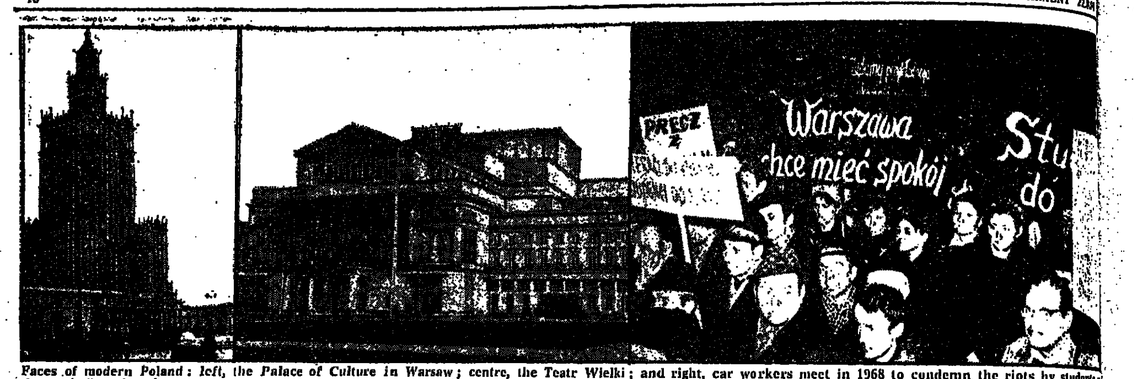

Faces of modern Poland: left, the Palace of Culture in Warsaw; centre, the Teatr Wielki; and right, car workers meet in 1968 to condemn the riots by students at the capital's university.

The marginal concerns of a Monday morning

Jan Szczepanski contributes to our series on academic freedom with an account of the constraints existing in Poland

The modern idea of academic freedom came to Poland in the nineteenth century as "repetition" of Humbold's ideas of Lehrfreiheit and Lernfreiheit. But the political conditions in nineteenth-century Poland did not permit the full application of those ideas. In a nation without state, living under foreign rule, the universities were also controlled by foreign governments, looking to secure their own interests and not to permit the development of independent Polish aspirations. Thus these few institutions of higher education which existed were strictly controlled. The situation changed after 1918 until 1939 in an independent Polish state, when the freedom of research, learning and teaching were proclaimed as basic principles of higher education, together with a degree of privilege for academic teachers. The invasion and occupation in 1939 changed all this again, destroyed the system of higher education and only a few institutions continued as underground schools in the "same spirit." The reconstructed and newly created schools after 1945 started on the same principles as between the wars. What is the situation today?

First, let us state what we have in mind when speaking about academic freedom? Looking through dictionaries and encyclopedias we find several definitions differentiating according to country and political system. Generally speaking academic freedom consists in certain legal guarantees given to institutions of higher education, to academic teachers and to students. For institutions academic freedom means mostly: (a) self governance by authorities/rectors, deans/elected by academic teachers; (b) financial independence from governments; (c) limited accountability; (d) measurement of the effectiveness of higher education by internal criteria.

For academic teachers: (a) "to state the truth as he sees it without fear of losing his position or standing"; (b) the freedom to give the curricula his own content deriving from his own research; (c) lack of control of his courses by external persons or by academic authorities; (d) a nominated professor is irremovable; (e) free choice of courses and seminars he wants to teach; (f) free choice of the subject of research.

For students: (a) free choice of subjects of study; (b) free choice of institution; (c) the right to participate in any student organization; (d) the right to move from one school to other. There are, of course, also other items seen as components of academic freedom, but I would like to limit myself to those enumerated above.

Let us look at the situation in Poland. The institutions of higher education are a part of planned school system and are centrally directed by the Ministry of Science, Higher Education and Technology. The self governance of institutions is limited and rectors are appointed by the minister. There is only one private university in Poland, namely the Roman Catholic University in Lublin, which is beyond the direct control of the government, although bound by the Higher Education Act. All institutions, except the Catholic University, are financed by public money, the appropriations being decided by parliament. In consequence they are accountable to the government and spending is controlled by minister. The measurement of effectiveness, however, is quite another problem. The criteria of the quality of education are set up by schools, and the main criterion of effectiveness is the percentage of enrolled students getting their diplomas in foreseen time.

The freedom of academic teachers in Polish philosophy and social sciences. And this is due to the lack of any direct control over the teaching activities of academic teachers except for teaching assistants, who are controlled by their professors. Of course, it is as hard to imagine a declared anti-communist teaching Marxism, as to see a declared atheist teaching theology in a theological school. A professor in Poland once nominated by the State Council can be removed only by a court of justice. The curricula are structured in order to provide for all students the necessary professional knowledge, but any professor can teach additional courses or seminars.

The students profit from free education, but at the same time, the government tries to safeguard the planned numbers of graduates by regulations of curricula and time of study. The curricula are established by academic teachers, approved by the minister and obligatory in all schools of given type. A student can choose freely the subject of study and the school, if he passes the entry exams. He can move from one school to another only for some important reasons and only with permission of school authorities.

Is the issue of academic freedom really important in contemporary higher education? The principle was introduced in the nineteenth century for several reasons: to secure the free development of sciences; to secure the education of harmonized personalities of students; to permit the self-fulfilment of students; to make free research a principal factor of *Erziehung durch Wissenschaft*. There were also some political influences of liberalism and liberal political parties, trying to use university as a factor in political struggles. What then changed today?

Let us enumerate some important processes of change: the transition from elite to mass education; influx of students from lower social classes brought about the aspiration of students first of all to professional skills. The economy of education spread a brief that the demand of qualified labour force is an important factor in economic growth. The growing costs of higher education made the problem of effectiveness of spending an acute question. The involvement of students and teachers in political struggles, student unrest, etc. radically hit higher education with political activities. In industrial society higher education became a part of many systems: economic, political, military, cultural and many groups took an interest in the process occurring within it, or processes influenced by the scope and quality of higher education. To use Joseph Perkin's formulation the transition "from autonomy to system" has been linked with involvement in many directions, which made the higher education sub systems of many systems for which the problem of academic freedom is practically meaningless.

To some extent these processes changed also the problems of higher education in Poland. Graduates, government, many groups of society are mostly interested in the effectiveness of higher education investments in learning, employment, and academic freedom is seen rather as a factor increasing the effectiveness and not as a value in itself. As in many other countries there are scholars writing about the value of academic freedom, most academic teachers pay lip service to it, but the pressure of the Monday morning realities of the everyday life "place it on the margin of current preoccupations."

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The plant and the industry: a question of balance

from page 9

reviews. Its age is a useful reminder of the fact that the dedicated cultivation of quite recondite areas of the garden of English studies is not a new phenomenon, and that without the earlier scholars who engaged in such cultivation a poet like Marvell might have remained largely unknown for more than 200 years. It is scholarly rather than critical tradition represented by *Notes and Queries* is a strong and distinguished one in both Britain and America. It is found in more conventional form in several other British periodicals, none of which are, curiously enough, as old as several of their American and European counterparts. The *Modern Language Review*, founded in 1905, and associated since 1925 with the Modern Humanities Research Association is the oldest in subject matter is by no means exclusively English; and, as its title suggests, its roots were originally in old-fashioned philological scholarship, among of the virtues of which it still retains. The same might be said of the excellent *Medium Aevum*, which covers medieval language and literature, and which was founded in 1932, and of the *Review of English Studies*, founded by R. B. McKerrow in 1925, but after his death taken over by Oxford University Press. It was partly due to his belief that *Review of English Studies* was uncritical, too exclusively scholarly, and too much the voice of a complacent Oxford establishment, that F. W. Bateson founded *Essays in Criticism* in 1951. In fact the editorial policy of this Oxford-based American periodical since those days, if one looks back to the volume for 1950, the year in which *Essays in Criticism* was in gestation, one finds essays by Peter Levens on Greville, Frank Kermode on Vaughan, C. C. Lewis on *Hamlet*, and Muriel Bradbrook on *All's Well*, all of which, footnotes apart, might easily have appeared in Bateson's own journal. Recent volumes are much more clearly in the McKerrow tradition of learned and scrupulous scholarship.

There is only room here for brief notice of a few of the hundreds of American periodicals devoted to English language and literature. Mention has been made of several already, including the *Southern Review*, one of the best representatives of a kind of periodical—one would add to the group the *Sewanee Review*, the *Hudson Review*, and the *Partisan Review*—which sadly has no real counterpart in England. Like the *Criterion* they mix critical with poetry, short stories and reviews, and they provide a substantial and lively alternative to the huge number of more narrowly academic English periodicals published in America. It is significant that there are, as has been said, many among this latter group that are older than their British counterparts; that fact points to a strongly established tradition of the academic study of language and literature that originally owed as much to the German as the English example. Oldest and most prestigious of the American periodicals is *PMLA* (Publications of the Modern Language Association of America), founded in 1884 and now in its ninety-fifth volume. The very first article was on Richter's correspondence with a lady, and it still covers all modern languages and literatures, though it has over the years come to focus more on English than on other literatures.

Whether it continues to justify its reputation as the American periodical at whose contents page both English and American readers look first seems to me doubtful. Though standards remain high, and subject-matter and critical approach more varied than ever, the editorial of the January 1979 edition rightly admitted to a feeling that *PMLA* could be more lively, a bit more controversial, more likely to engage the attention of our readers." The call was for essays "spacious in conception, written in language that is at least readable, even quotable". So far contributors do not seem to have responded, and it is at least arguable that *PMLA*'s role as the leading academic journal has been taken over, as far as English is concerned, by the younger *ELH* (founded in 1934), which over the past few years published a large number of essays that have fulfilled at least some of these criteria. *JEGP* (*Journal of English and Germanic Philology* (founded in 1899) and *Modern Philology* (1903) are both distinguished scholarly journals whose range is similar to that of *PMLA*, but both could usefully sort themselves into the same sins as those described by the editor of *PMLA*, as could the third and youngest member of the philological trio, *Philological Quarterly*, published by the University of Iowa, and now in its fifty-seventh volume.

Two more recently founded American journals which have at the moment more intellectual liveliness about them than these latter three are *Critical Inquiry* (1974) and *English Literary Renaissance* (1971). The first has provided a forum for much intelligent debate on aesthetic issues of various kinds, and is a good answer to those who feel that criticism of criticism is necessarily a sterile exercise that removes the academics still further from literature. The strength of the very handsomely produced *ELR* lies in its policy of publishing new texts and bibliographies of individual authors as well as long essays of the more conventional kind.

This review has only touched on a small proportion of the huge number of periodicals that are associated with the study of English. I have not considered important general humanities journals like *The University of Toronto Quarterly* or *Durham University Journal*, nor the various library journals, some of which are very close indeed to the subject, nor the linguistic periodicals, the latter purely because of incompetence, but partly on the grounds that linguistics is opposed to the history of the language forms a quite distinct enterprise.

Even among the periodicals unambiguously classifiable under the heading of English studies, I am conscious of many that are missing from this review. There are too many to write about, but there are too many to read. The numbers testify in one way to the flourishing state of English studies, and the standards of many of them undoubtedly refute Anne Smith's critical claims. But there are too many for one man to read, and it is a sign of the times that no single periodical, or even a small group of periodicals, emerges from this survey as truly essential reading for all students of English. To discover which are the good articles are one takes time, has to cast one's net very wide, and use another periodical, or one of the *Work in English Studies*, or the annual bibliographies, or the new and infuriating *Arts and Humanities Citation Index*. Or one waits for the best of them to be distilled into a book.

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BOOKS

In the best of all possible worlds

Other Worlds: space, superspace and the quantum universe
by Paul Davies
Dent, £7.50
ISBN 0 460 04400 1

by John D. Barrow

It has been said that the mark of good philosophy is to begin with an observation so mundane that it is regarded as trivial and from it deduce a conclusion so extraordinary that no one can believe it. In this latest addition to his string of successful explanatory texts, Paul Davies has chosen an area of physics that bears this hallmark more clearly than any other.

Quantum physics bristles with extraordinary conclusions. It has grown out of the need to explain a series of unusual experimental results concerning the behaviour of atomic and radiative processes. The traditional approach towards building a model of the atom had assumed that Nature was economical in its use of design principles, choosing merely to scale down the scheme of the solar system to atomic size rather than pick a completely different structure. Unfortunately, this simple view leads to a flagrant contradiction with our everyday observation of the world. If the atom is imagined to be nothing more than a mini solar system, held together by the balance between electric forces and the motion of electrons encircling its central nucleus then a serious problem emerges.

Electrons possess a quality familiar to us in the large, electric charge. For the charged electrons to be maintained in orbit around the nucleus they must do work and so expand energy. Their speed will therefore drop and so they will move a little closer to the nucleus. However, just like the pirouetting ice-skater, the electron will now spin even faster, lose energy still faster, approach the nucleus again, and so on. This slippery road, which physicists call the "instability", means that the electrons would be doomed to spiral into the nucleus in a very short time. Atoms could not exist.

In 1913, Niels Bohr suggested a simple, but profound modification to the naive "solar system" type of model which completely resolves this difficulty. He proposed that the energy of electrons bound within an atom is restricted to certain discrete values; multiples of a fixed and fundamental energy "quantum". The electrons cannot change their energies continuously so they do not steadily slide into the nucleus. In order to lower their energy they have to change its value by a whole quantum. This new model of the microworld, so different from our intuitive ideas about one ought to be able to put an electron in orbit anywhere about a nucleus, was a remarkable success. It explained a host of observational anomalies in spectroscopy and provided a sound basis for the systematic study of all atomic and molecular phenomena.

Some years later Erwin Schrödinger discovered a differential equation which enables the quantization of energy to be understood more clearly. Furthermore, it revealed the reason why sub-atomic phenomena simultaneously display the properties of waves and discrete particles.

All the information available about an object can be embodied in a mathematical construction, termed its "wave function". If we know this function then Schrödinger's equation allows us to predict the behaviour of the object as far as it is possible for it to be predicted. It also allows us to calculate the only quantity of immediate relevance to us as observers: the *probability* that the object we measure will possess any particular configuration when we examine it. In some cases the probability will be so overwhelmingly high for a particular realization that it amounts to a certainty: in that case the familiar "classical" (non-quantum) picture of the world is an excellent approximation to the quantum model.

The key difference between the classical and quantum pictures is that, although both are built upon deterministic differential equations, in the latter the quantity whose evolution is exactly determined (the wave function) is not observable. When we carry out a measurement of a system we inevitably alter the form of this wave function. All the wave function and the laws of physics can give us are probabilistic connexions between subsequent measurements of the system. This apparent uncertainty is not interpreted as a deficiency of the quantum theory as currently formulated, but as an intrinsic feature of the perturbation which the very act of measurement introduces.

Dirac, writing soon after these features were first realized, succinctly summarized the impact of this discovery: "The classical tradition had been to consider the world to be an association of observable objects moving according to definite laws of force, so that one could form a mental picture of the whole scheme. It has become increasingly evident, however, that Nature works on a different plan. Her fundamental laws do not govern the world as it appears in our picture in any direct way, but instead they control a substratum of which we cannot form a mental picture without introducing irrelevancies."

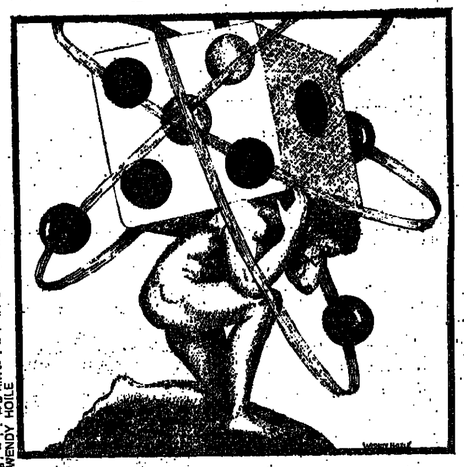
Other Worlds opens with a simple, non-mathematical introduction to the ideas and consequences of quantum physics. The author's aim is to emphasize the new world view this physical theory forces us to contemplate. He lays a good deal of emphasis upon the unpredictable and apparently chaotic picture of microscopic processes. It might have been illuminating to show that there is another side or the coin: Bohr's quantum theory only allows atomic electrons to occupy certain discrete orbits around the nucleus. (In modern terms we would say that an electron would most probably be observed in these orbital states.)

Now suppose Nature were built upon non-quantum principles: one could place a single electron about a proton in an infinite number of stable orbits just by choosing their relative velocity and separation to produce a balance between Coulomb and centripetal forces. The result—every hydrogen atom would be different: no replicating systems would be possible and the price of microscopic exactitude would be chaos in the large. Seen in this light, quantization also ensures that atomic systems do not continuously change under the constant buffeting of neighbouring atoms and photons. It is a boon for the large-scale stability of nature.

The early chapters of *Other Worlds* revolve around three famous paradoxes spawned by the existence of the wave function. These display the alarming subtleties of interpreting quantum theory. Although familiar to practising physicists, the dilemma of "Schrödinger's cat", "Wigner's friend" and the "Einstein-Podolsky-Rosen paradox" do not seem to have tunnelled their way into the public imagine to the same extent as relativistic conundrums like the "twin paradox". Yet, taken at face value, they are equally bizarre.

The culprit in these challenges to common sense is inevitably the "wave function". It is always possible to set up a quantum mechanical state which is a combination of any two other states. However, one is at liberty to choose these two component states so that they correspond to situations which, on a *macroscopic* view, are mutually exclusive. In the case of the cat paradox the two states are chosen to represent "dead cat" and "live cat" respectively. So how do we interpret the quantum state which looks like the average of a live and dead cat?

Paul Davies skilfully employs these paradoxes to paint a very clear picture of the strange notion of reality physicists have been forced to accept. Yet, in spite of his lucid presentation, there is a problem he never addresses, and which will be lurking in the minds of his audience: Is not quantum theory, in spite of its overwhelming operational success, after all just a model, a picture of reality? It is strongly supported by observation; but then so was Newton's theory of gravitation. To build a philosophy or interpretation of reality upon the particular representation our minds have chosen as the vehicle of physical description is a dangerous project. And then again, the reader wonders, if our rationality is purely a manifestation of such microphysical uncertainty what grounds can we possibly have for faith in its deductions?


WENDY HOILE

The latter half of the book moves on from a discussion of specific problems of quantum measurement to outline the so-called "many worlds" interpretation of quantum mechanics. Parmenides was the first to introduce the idea that the subjectivity of every man's experience introduces a non-uniqueness into our ultimate descriptions of the world. The "many worlds" interpretation of quantum theory, introduced by Hugh Everett in 1957, develops this idea in a modern mathematical form. Since its inception it has been a constant area of dispute among eminent physicists.

The "many worlds" interpretation stands in complete contrast to Bohr's traditional interpretation of quantum mechanics. It takes the mathematical formalism at face value and restores the wave function to a status that admits it as a true description of the world. When pushed to its logical conclusion Everett's interpretation maintains that all possible outcomes of measurements actually exist. Each elementary process, each observation and pointer measurement we take, picks a path through the mesh of all possible outcomes.

This splitting process that measurement induces in the world of possibilities is unobservable, and all the unrealized "other worlds" are disconnected from each other and from our own experience. At first sight this appears like a guide to solipsism extracted from a dusty tome of scholastic philosophy, but in context, it possesses many appealing features which its supporters claim ameliorate problems in the interpretation of quantum theory. The "other worlds" lead, in a natural way, to the statistical properties of quantum systems. Microscopic indeterminacy is seen as a consequence of our access to such a limited portion of the "superspace" of all possible worlds. The evolution in the "superspace" is entirely deterministic.

Davies describes how the "many worlds" picture can be used to motivate consideration of an entire ensemble of possible universes (multiverses?), the conditions and behaviour of which fill out the whole infinite range of possibilities. They can all be interpreted as necessary and extant mutations from the world we experience rather than purely hypothetical constructions. Now it becomes possible to formulate the ancient notion of "the best of all possible worlds" in a framework that demands the dissimilar alternatives actually co-exist!

It should not surprise us to learn that our own universe belongs to a subset of the "superspace" of universes which possess life-supporting features like stability, large size, low temperature, carbon chemistry, and so forth. But, turned upon its head, this tautological statement creates an interesting perspective on Nature: if we observe the Universe to possess structural features which are, *a priori*, remarkable but necessary for the evolution of intelligent observers, we should temper our surprise at these observations. This view of many superficially peculiar features of our own universe's large scale structure has gained in popularity among cosmologists in the past ten years and goes by the name of the "Anthropic Principle". It is well described in chapter eight of Davies's book.

If one subscribes to the "many worlds" interpretation then all possible worlds really do exist, skting like the volumes of Borges's *Library of Babel*—all possible typographical permutations of possible books. Like the librarians assiduously searching for the intelligible works, we can examine the spectrum of structural possibilities in the ensemble of worlds and evaluate the special features of our own universe in the exclusive society of life-supporting universes.

Davies discusses how one could imagine the size of "superspace" enlarged to encompass candidate worlds with different values for the fundamental constants (for example, changing the ratio of the proton to electron mass). Surprisingly, these perturbations from our own universe invariably seem to be still-born, unable to generate the basic atomic structures necessary to evolve complex, replicating organisms. They seem doomed to be devoid of observers. Fine tuning between the conditions required to support life and those actually observed is interpreted as "natural selection" in "superspace".

If one does not take the "many worlds" picture seriously (and after all, there may exist infinitely many worlds in which even Everett himself does not believe it!) then subscribers to the anthropic principle may regard our own universe as unique and pre-programmed to produce "observers". This approach is closely related to a train of thinking with a long and chequered history. From the dawn of history men have recurrently argued for the existence of some form of teleological structure working within or transcending the natural world. This view has traditionally been supported by "design arguments" which point to the beneficent and meticulous anthropocentric plan of Nature—a design that superficially operates with the existence and continued survival of humans in mind. It is a view that many great scientists of the past have subscribed to. Following Cicero and Aquinas it was generally construed to support an argument for the existence of a "benevolent deity, or deities".

Not surprisingly, there have been many enthusiastic opponents of this "natural theology" which has evolved and adapted itself to existing scientific knowledge for many hundreds of years. Yet it was a world-view that was scarcely perturbed by the logical critique of Hume and Kant or the satirical tirade of writers like Montaigne and Voltaire. "Philosophical" objections had little impact because they lacked the "observational" basis of the simple design arguments of Derham, Ray or Paley which were firmly welded to the observation of Nature and acted as an important stimulus to its investigation.

The teleological antecedents of the "anthropic principle" were erected upon all manner of remarkable natural contrivances, each apparently tuned to the pre-conditions of our survival. Living organisms clearly fitted their environments hand-in-glove; and, to some, even laws of Nature—the inverse square law of gravity and the dynamics of the solar system—appeared to be miraculously preferred amid the sea of anthropocentrically unfavourable possibilities.

Although Darwin was to revise our perspective on many of these contrivances in a radical fashion, he confessed that he had been strongly influenced by the classical design arguments which so clearly placed before him the striking examples of adaptation that are exhibited in Nature.

The "anthropic principle" that Paul Davies describes can be seen as a sophisticated version of the early design arguments. Instead of appealing to contrivance and fitness of local and transient features of our own universe, it points to those invariant, or unique, aspects of its global structure which make it well adapted to accommodate the evolution of living organisms. The incorporation of the Everett "many worlds" interpretation of quantum mechanics generates the "other worlds" necessary to validate any statements of comparative reference.

Again the reader may object that this is just a convenient way of seeing things. After all, we recall another attempt to place the notion of "the best of all possible worlds" on a rigorous footing. Maupertius interpreted his principle of "least action" in this vein, claiming it to be a superlative argument for the existence of God. The possible motions of a dynamical system can be parametrized by a quantity called the "action". The path actually taken by the system is always that which minimizes the action and this provides an elegant way of deriving the equations of motion.

Viewed only in this light the action principles of physics appear entirely teleological, and Maupertius interpreted their existence as evidence that the actual course of Nature was preferred" shid is sea of mathematically precise but unfavourable alternatives. The least action path was the best of all possible worlds. However, action principles can easily be reformulated in terms of deterministic differential equations which evolve specific initial conditions forward in space and time: the teleological aspect vanishes. We have alternative representations of a physical problem which, although mathematically equivalent, are metaphysically divergent.

These are some of the issues that Paul Davies's stimulating and provocative book touches upon in his presentation of some standard and speculative aspects of modern quantum theory. His exposition should appeal to a wide audience of interested laymen and they will find no more lucidly written introduction to an area that has challenged some of the twentieth century's greatest physicists for an interpretation.

John D. Barrow is a research lecturer in astrophysics at the University of Oxford. He is currently on leave in the department of physics of the University of California at Berkeley.

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BOOKS

Benedictine survival

The English Benedictines 1540-1688: from Reformation to revolution
by David Lunn
Burns & Oates, £13.50
ISBN 0 86012 095 3

The history of English Catholicism since the Reformation has been particularly well served in recent years, most notably in John Bossy's *splendid* study, and the subject has shed its earlier hagiographic tradition and the restrictiveness inherent in much recusant history. David Lunn's study of the English Benedictines from the Reformation to 1688 (pursuing the course set by the late David Knowles) is a further significant contribution to our knowledge of the complexities of English Catholic survival in the sixteenth and seventeenth centuries.

The book falls into two main sections. The first traces the Benedictine revival from 1588, culminating in the securing of an English mission and the subsequent establishment of an English Benedictine Congregation, and examines the clerical and lay politics into which the monks were drawn. The second section centres on the way in which missionary life was organized and investigates its distinctively Benedictine character and ideal.

The revival took place among missionary students in two centres, the English College at Rome and the college at Valladolid, as both institutions were experiencing student unrest. From Rome students entered the monastery at Monte Cassino (hence Cassinese Benedictines) and differed from their Anglo-Spanish brothers in that that they hoped for a rapid reversal of the Reformation in England and the resumption of traditional monastic life, while the latter were more imbued with Counter-Reformation missionary fervour and placed greater emphasis on collegiate, rather than monastic, observance.

These differences were such as to protract negotiations for a united congregation over 10 years. On entering the English mission, the Benedictines inevitably clashed with the Jesuits. Papal permission for a mission was granted in 1602 on the understanding that the monks would not involve themselves in clerical politics—but the political situation in England, coupled with the resentment of their missionary rivals, made such an abstention impossible. In the wake of the Gunpowder Plot, a new oath of allegiance put Catholic loyalty to the test and, as in the earlier Appellant controversy, division ensued.

The majority of Benedictines in England at the time may have been inclined to take the oath, like most of the laity, but the Jesuits resolutely opposed it as did most of the other clergy. From his comfortable quarters in the Clink, Thomas Preston, a leading Cassinese Benedictine, went into print (with grateful government assistance) to deny the Pope's deposing power and defend the oath, and after 1611 the monks divided on the issue, with the Cassinese approving, and the Anglo-Spanish opposing it. Meanwhile, proposals for setting up Benedictine training colleges produced further conflict with the Jesuits who resented the competition for students and resources, and not until 1611 were amicable relations finally established.

The monks also became embroiled in lay politics as unshakeable royalists, a topic which Dr Lunn has rescued from neglect. Under Charles I the monks, as gentlemen who frowned on fanaticism, were regarded as more acceptable at Court than their fellow clergy. One of their number, Leander Jones, after a slight acquaintance with England, sent reports to Rome in 1634 containing some wild claims, such as that Charles I was at heart a Catholic and that the Anglican clergy would willingly submit to re-ordination. Throughout the Civil War and Interregnum, the Benedictines remained constantly loyal to the King and resisted the suggestion of a group of seculars that Catholics should collaborate with the Protector. Their influence on the Stuarts reached its peak in the reign of Charles II when they were specially favoured by being made the Queen's chaplains until their expulsion in 1674. And it was a monk, John Hudleston, who heard the dying King's last confession. James II restored the Benedictine community at St James's and a Benedictine monk insensitively helped to topple him by applying for an MA at Cambridge. Influential though they were, the monks' political judgment was apparently rudimentary.

Dr Lunn has not allowed the destruction of the congregational archives during the French Revolution to seriously hamper his work but has made an extensive and impressive coverage of domestic and foreign archives in his search for relevant material. The result is a meticulously researched and judiciously argued work richly deserving the attention of those interested in the early modern period.

Keith Lindley

Keith Lindley is lecturer in history at the New University of Ulster.

"Daniel in the Lions' Den" by Andrea Schiavone. Clarendon Press has recently published at £30 a volume in the Oxford Series in the History of Art and Architecture devoted to Schiavone, a contemporary of Titian and Tintoretto. The text is by Francis L. Richardson.

Great men in the rise of Christianity

Martin of Tours: parish priest, mystic and exorcist
by Christopher Donaldson
Routledge & Kegan Paul, £8.95
ISBN 0 7100 0422 2

Consul of God: the life and times of Gregory the Great
by Jeffrey Richards
Routledge & Kegan Paul, £9.75
ISBN 0 7100 0346 3

It was no accident that the rise of Christianity in the western Roman world was dominated by great men. As the inability of the state to secure justice, efficiency and even its own survival became increasingly apparent authority became more and more a personal matter. The heroes of the church replaced the state with a new institutional fabric and constructed magisterial statements of Christian doctrine. But their power rested first on their individual force of character. Because they were able to articulate the aspirations and defend the interests of their flocks, and still more because they could display in their persons freedom from worldly ties and passions, they were able to embody the abstract ideals of justice and impartiality which Roman law had long since ceased to serve, and leadership was conferred on them in their communities, and then beyond.

In consequence early church history is a field more amenable than most to treatment by the dubious arts of biography. Martin of Tours, who has never been the subject of a serious study in English, and Gregory, the Great, subject of an extremely serious one (by F. Holmes Dudden) three-quarters of a century ago, are particularly welcome subjects. Though missionaries and mystics both, they offer a piquant contrast.

Martin, son of a common soldier and himself compelled to serve for 25 years before he could escape to the holy life, was the hairy man among the smooth Gallo-Roman bishops of the later fourth century, one of the first to realize the embrace of popular religion which, since Constantine's conversion, had threatened to smother the church in privilege. Gregory, a Roman of Rome, the descendant of prefects and popes, rebuilder of the city, organizer of relief for distressed gentlefolk (including the aunt Patricia), diplomat and consul, arbiter supreme, could be said to have consummated the union which that embrace prefigured, and made the Roman church, in Hobbes's glorious phrase, "the ghost of the Roman Empire sitting crowned upon the grave thereof".

A different contrast separates these two studies. Mr Donaldson's is essentially a devotional work and as such may be judged elsewhere. Regrettably it includes the debates and discoveries which have informed our understanding of every aspect of Martin's world in the last half century, and has no value for those whose interest is in the human past. At any rate, Mr Richards's competence is not in question, nor his awareness of the issues involved in the study of Gregory's letters is wonderfully rich, of course, because of it, as Richards says, the reign "provides a unique and detailed close-up, impressively documented account of the late medieval papacy at work, and which highlights Gregory's notable qualities as a ruler". But an exact description of the world is not to plumb it and grasp the force of its impact on others, from his office through his thought, his teachings and his life must be scrutinized with all the thoroughness and perhaps the imagination before the question of his actions can be clear.

Donaldson's account, which devotes much attention to the spiritual agonies and victories through the reported legends of miracles, to assess and account for his popular impact. The other is vainglorious, because it is merely narrative: acquaintance with such work would have shown him that these matters are capable of systematic and objective consideration through the informed scrutiny of texts and by comparison with what has been observed, often with brilliant perception, in other cultures.

"It is a pity that a different division of labour was not possible, these might have been fine books though one of them is very wrong—if Donaldson had asked the questions, and left the answers to Richards.

R. I. Moore

R. I. Moore is lecturer in history at the University of Glasgow.

BOOKS

Doctors' orders

The Ceremonial Order of the Clinic: parents, doctors and medical bureaucracies
by P. M. Strong
Routledge & Kegan Paul, £8.95
ISBN 0 7100 0379 X

All is not well in the doctor-patient relationship. Analyses of this, the heart of the medical enterprise, abound, most commonly focusing on the problem of communication. This book, based on observations of over 1,000 clinic consultations between doctors and parents, adds to the tally but adopts a rather different perspective. Strong rightly argues that too many studies have treated doctor-patient communication without reference to the context in which it occurs. He sets out to explore one facet of this context, the formal structure of the relationship, drawing extensively on his observational data in the process.

Consultations, he argues, are constrained within something akin to a morality play—a rigid framework involving marked idealization of the characters of the participants and of the relationship itself. Thus in its predominant form in the National Health Service, mothers appear as competent, loving, and sensible, but also as medically ignorant. Doctors appear as always competent and expert, concerned first and foremost with the health of the particular child in front of them. The relationship is presented as a cooperative one in which parents support the doctor. The participants carefully construct their actions to maintain this image, at least on the surface, and rarely depart from the script. This is "the ceremonial order of the clinic". It is, though, as Strong emphasizes, a precarious reality. There may be undercurrents (but they are generally kept at undertones) of a very different order or threats of various kinds—for example, when a mother does have medical knowledge, or when an alternative concern like teaching intrudes. Consequently, the participants, especially the doctors, must sometimes work very hard to maintain the facade, or "repair" it when it is damaged. All of this Strong explores in detail in the central chapters of the book (non-sociological readers will do well to avoid chapters one and nine which are concerned with more technical sociological issues).

There is, though, a problem in this account which Strong does not adequately come to terms with because his methodology led him to neglect to talk to parents about how they saw things. How far would the parents recognize his portrayal of the rules of the occasion? For example, do mothers always feel they are being treated—even on the surface—as competent, rational, ideal mothers? If not, it would seem somewhat misleading to talk about this as "*the* ceremonial order of the clinic".

Why, though, should consultations follow this semi-charade anyway? Strong's explanation, is partly historical, but he also suggests that the rigid format makes it possible to handle potentially difficult and troublesome encounters relatively smoothly. This has the advantage of maximizing the amount of medical work the doctor can do in the limited time available—but are there no negative consequences? For example, do parents sometimes feel they are unable to express their concerns adequately and if so, what effect does this have on the relationship? Does constraining communication within this rigid format, tightly controlled by the doctor, mean that important information gets lost or distorted? Strong's discussion of these and related issues is brief and disappointing. He tends to either emphasize his lack of competence to discuss them or he treats them as frills peripheral to the real business of getting children better (arguments strangely similar to those employed by doctors themselves to defend the status quo). They deserve deeper consideration than this.

Tim Robinson

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Sense and sensibility

Emotion
by William Lyons
Cambridge University Press, £12.50
ISBN 0 521 22904 9

The emotions have long been a neglected subject in philosophy, and have been regarded as essentially irrational in character. But there has been another tradition best exemplified in Pascal's remark, "*Le coeur a ses raisons*"—there is an order or logic in our emotions, in a sense Dr Lyons's book is part of the latter tradition. Among other things, he is concerned with the attempt by analytical philosophers to give a conceptual analysis of emotion through the medium of common usage. Dr Lyons's writing is clear and incisive, and his criticism of other philosophers' views on emotion are very much to the point. He covers a range of topics, not merely philosophically but also psychological and physiological. On all these counts the book has considerable merit.

Faced with its somewhat complex content, I will concentrate on the book's central theme—Dr Lyons's own causal-evaluative theory of the emotions. He believes that all emotions involve an evaluational character. Thus the sight of a ferocious bull may cause me to evaluate it as dangerous, so that I take to my heels, and this together with my desire to escape will stir up physiological processes: increasing blood flow, respiratory rate, and so on. Dr Lyons supports his theory with a modified form of the Humean theory of causation as constant conjunction to explain how a link may be established between an evaluative judgment and a physiological change.

Unfortunately, the credentials of the causal-evaluative theory are open to question. First, does seeing an object as dangerous or horrible necessarily involve an evaluative judgment? Might it not be the Gestalt psychologists maintain, be an actual perceived quality of the thing? As Sartre says of a frightening mask, the horribleness of the mask is in the mask and not within us. Presumably it is the emotional qualities of things as given in perception, before theoretical analysis steps in to disinvest us of them, that the poet and the artist try to express in their art.

Secondly, consider the causal link between evaluation and physiological change. On Hume's theory the link is between two similar sorts of things, namely, sensations. On Dr Lyons's theory the conjunction is rather between two radically different sorts of things: a first-person evaluative judgment (the cause), and a third-person physiological change (the effect), involving a theoretical system of explanation. As these two belong to different semantic categories, their expressions ought not to be coupled together in the same declarative sentence. Dr Lyons has little to say about the important work done in recent years on the phenomenology of the emotions. This is a pity since it would have given his work an added dimension. However, he does give an account of Sartre's theory, which seems incorrectly described as an adaptation of psychoanalytical theory.

Dr Lyons doubts whether Freud's theories have much applicability to everyday emotional situations, since they have been derived from clinical explanations of emotions such as anxiety or fear. Nevertheless, Freud's theories have thrown a new light on dreams and the parapraxes of everyday life, something common-sense explanations signally failed to do. A theory of the emotions must not only apply to normal emotional states but also to abnormal ones, and the latter may elucidate the former.

Wolfe Mays

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St Anselm

Anselm and a New Generation
by G. R. Evans
Clarendon Press: Oxford University Press, £12.00
ISBN 0 19 826651 0

This is a most sensitively-written essay on the development of twelfth-century thought in general, and of theology in particular; it should be of great interest not only to theologians, but also to historians, philosophers, logicians, and the general reader. Its author takes a most appropriate advantage of her already well-established status as an authority on the work of St Anselm of Canterbury to explore the contrasts between the saint's work and that of the subsequent generation, both in matter and manner. The delineation of varieties of language, motive, context, approach, and outcome is related throughout to the common concrete human intellectual aspiration in the face of theological mystery, and this with delicacy and deftness of touch.

The introduction sets the scene in contrasting the serene Anselmian sureness of approach with the more exploratory shift of emphasis which succeeded him, leading in the end to a rethinking of the body of doctrine, thanks to new methods and investigations of wider possibilities. The quite thorough nature of this rethinking is made evident in the first part, which deals with the general change of intellectual scene and with the challenges of dissidents and non-Christian thinkers. Since actual atheists would be rather rare at the time, the force of the developing dialectical discussion tended to be deployed in reaction to the contentions of Cathars, Waldenses, Jews, and Muslims with attention being paid also to the Greek variety of Christianity. The details of these challenges are described well and underpinned with a wealth of concrete and wide-ranging textual evidence.

Naturally, therefore, some detailed account of the concomitantly changing habits of thought is called for, and this is provided in the second part. Not only was there the increased use of dialectic (of which Abelard is the most famous exponent) but also a certain theological mistrust of the new-fangled styles. This in turn raises the general question of that relation between the arts (particularly grammar, rhetoric and dialectic) and theology with which the second part of the present work deals. For those who did opt for the use of the methods of such arts, plenty of recipes were available to aid the search for truth and for the finding and judging of arguments. The nature and consequences of the adoption of such recipes is well recounted—all the time with the Anselmian starting point, and the extent of contrasts therewith, most competently hold in view.

In the third and final main portion of the work, the results of these changes are surveyed, with theories of the Incarnation (of which Anselm's *Cur Deus Homo* was an early prime example) as instances. A most elegant and original study of the use of counter-factual hypotheses by Anselm and others in this and further connexions is coupled with the development of the *quaestio*-theology which was fast taking on its typically medieval form.

The conclusion is a magnificent example of that anthropology of theologians at which the author here and elsewhere shows herself to be so superlative an adept: the interactions of theology and personality, and the humanly grounded changes of intellectual climate are summed up in yet another Anselm-centred sketch. The appendix concerns the relations between Anselm and his pupil, Gilbert Crispin, as a representative of the earliest of the new generation. Thus ends a stretch of prose the limpid and consistent clarity of which sometimes belies the tangled skein of textual opacity to which supporting references of the most learned sort are provided at every point. For such elucidation one cannot but be most grateful.

D. P. Henry

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Classroom politics

The Philosophy of Teaching
by John Passmore
Duckworth, £18.00
ISBN 0 7156 1031 6

Professor Passmore is famous for taking on large subjects: *A Hundred Years of Philosophy*, *The Perfectability of Man*, *Science and its Critics* are some of his earlier titles. This time, however, he has applied himself to a relatively narrow subject, that of teaching.

It is agreeable to have a book actually devoted to this subject. On the whole, in the past 20 years or so, "teach" has become a suspect word. Education has been the more fashionable subject of discourse whether philosophical or practical, and the idea that an important part of education can come only through the positive intervention of a teacher who does not merely "facilitate learning" has been widely regarded as unjustified. In part, this hostility has been generated by contemporary theories of education, roughly child-centred, or by belated reaction against the old-fashioned methods of rote-learning, drilling or doctrinaire instruction in facts. But an important aspect of the suspicion of teaching is political; the teacher has been thought of as essentially one who sets himself above his pupils, and who is liable to indoctrinate them not only with certain facts, but surreptitiously by his choice of what are to count as facts; not only with certain values, but stealthily with those values which are useful to the bourgeoisie and the establishment. The very phenomenon of teaching has been seen as politically loaded, and inimical to the ideal of equality.

Passmore does, rather as an aside, defend the teaching of such "bourgeois" things as reading, writing, calculating—the "clerkly skills" as he calls them—and he emphasizes the "bourgeois" ideal of clarity of communication. But he does not really face the fact that education in general, and teaching in particular, is a political activity in the broadest sense. In his first chapter he explicitly disavows any concern with "those problems in social, political and moral philosophy which arise out of the character of the school as an institution". But it is not so easy as he seems to think to separate those problems from the teaching which is his concern. The well-known tendency of the left to proclaim its political engagement, while the right denies that its own stance is in any way political is manifested in this book. And such a tendency diminishes the plausibility of the arguments, by suggesting a certain disingenuousness in their author. This is a pity; for many of the individual chapters are well worth taking seriously, being full both of common sense and humanity.

Passmore defines the subject of his analysis as "the sort of things somebody can teach somebody-in-a-class". He insists that these sorts of things are very various and should not be narrowly conceived. You can teach people to develop capacities, you can teach them to acquire information, or you can give them information directly. Teaching can also be a matter of encouraging or cultivating certain mental faculties such as imagination, observation, criticism, carefulness of understanding. In examining all these kinds of things which may be taught, Passmore considers the claim of each to be the unique thing-to-be-taught, and very properly rejects them all. All have their place, but none is of supreme importance. Most educational theorists, he argues, have made exaggerated partial claims. An eclectic, practical, open-minded view of the teachers' role is to be preferred. Passmore also very properly insists that the teacher must know *what* he is teaching, and what he is teaching it *for*. He must be able to justify the inclusion of certain subjects in the curriculum, and the adopting of certain classroom methods by reference to a hoped-for outcome for the pupil. If this is right, as I am sure it is, then the reading of such books as this one should form an important part of the education of student teachers.

In the last part of the book Passmore seeks to apply his earlier conclusions to two highly controversial areas, the teaching of English and sex education. Here his amiable moderations, his manifest desire not to be dogmatic, but to give all contenders a fair hearing are, if anything, counter-productive. We finish the book thinking "what a nice, sensible man". But unfortunately the most sensible views are not always the most galvanizing, and therefore not always the most effective in bringing about desirable reform. Current practice in the teaching of English and of sex is shown up as, quite often, disgracefully bad and misconceived. But it is doubtful whether Passmore's mild remonstrances will go far towards remedying the evils.

There are at least two propositions in these concluding chapters which deserve more detailed, and perhaps less cool, treatment. First, there is the proposition that not all children need to be taught to be literary critics; that it is more important for most people at school to enjoy literature than to learn to say what is enjoyable about it. This proposition is true and in great need of defence against, for example, the teaching of O-level English. Secondly, Passmore proposes that there is more to the moral aspects of sex education than teaching children how to make rational choices. This thought calls into question the whole nature and purpose of moral education at school as it is now generally conceived. If Professor Passmore would devote his next book to its further exploration, this would constitute a return to the boldness and breadth of his earlier writings.

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Chapman & Hall (1980-1980)
Scientific, Medical and Technical Division of Associated Book Publishers
11 New Fetter Lane, London EC4P 4EE
Methuen Inc
733 Third Avenue, New York NY 10017

RONALD L MEEK
Smith, Marx, and After
Ten essays in the development of economic thought
Orthodox economic theory is today being challenged by radical economists of various persuasions, who often claim that the economics put forward by earlier writers such as Adam Smith and Karl Marx is more relevant to present day problems than the economics put forward by many of their successors. This book discusses the work of Smith and Marx from this point of view, and relates it to the more recent contributions both of those who have worked in the same tradition and of those who have rejected it.
This book, originally published in hardback in 1977 by the late Professor Meek, is now available for the first time in paperback.
Excellent reference for undergraduates, graduate students, and professors in economic thought and economic history; also those interested in sociology and political thought. *Choice*
1980 204 pages Paperback 0 412 22030 X £4.95

BOOKS

Literature born of oppression

Extreme Situations : literature and crisis from the Great War to the atom bomb
by David Craig and Michael Egan
Macmillan, £11.00 and £5.50
ISBN 0 333 24579 2 and 24580 6

This is a decidedly unfashionable book. The authors, both committed socialists, are not concerned here with the characteristic topics of cultural debate on the left in the past decade. There are no chapters in *Extreme Situations* on formalism, Lukács, Benjamin, Gramsci, ideology, or cultural materialism, no "Authorial Ideologies" or "General Modes of Production". They do not regard the refutation of Terry Eagleton as the major task of socialists today. Nor do Lacan, Barthes or Derrida figure prominently (or at all) in their work. Craig and Egan are more interested in political oppression, concentration camps, war and revolution than in Marxist critical theory.

They take their title from the psychologist Bruno Bettelheim, whose "Individual and Mass Behaviour in "Extreme Situations" appeared in *The Journal of Abnormal and Social Psychology* in October 1943, and was subsequently incorporated in Bettelheim's *The Informed Heart*. An inmate at Buchenwald and Dachau before the war, Bettelheim attempted in this article to draw some general psychological conclusions from his own experiences and observations. He described the "regression into infantile behaviour" produced by camp life. Unable to control any aspect of their daily routine, requiring permission even to go to the latrine, the prisoners rapidly adapted to a situation in which dependency and an infantile desire for immediate gratification were commonplace. The inmates of Dachau were systematically deprived of personal dignity, and the ability to function autonomously as mature adults. The account which Bettelheim gives of their behaviour is unflattering, as would indeed be that of anyone deprived of essential aspects of their humanity.

A similar argument emerges in American historiography a decade later, perhaps indebted to Bettelheim, when Stanley Elkin argued in *Slavery* that the infantilization of the blacks was an essential result of slavery. Elkin's thesis was attacked and eventually destroyed by critics who suggested that the conditions of slavery produced other, more complex modes of adaptation, and that rather than having sunk into childishness, the slaves evolved a complex, defensive response. They learned to deceive, to put on Mass. Such an argument was, indeed, more congenial to the sensibilities of blacks in America and to the more assertive black power of the 1960s. Bettelheim's account of the passive and infantilized concentration camp inmates might be approached with a similar expectation. The picture of the Gulag which Evgenia Ginzburg and Alexander Solzhenitsyn gives us, the account of Auschwitz by Jozef Garlinski, suggest conclusions which qualify and transcend Bettelheim. Literary "evidence" in this case is an indispensable aid in recovering the lost dignity and spirit of the nameless and voiceless victims of extreme situations. Craig and Egan indicate the vast range of the material, and in doing so they sketch out what is in effect an alternative syllabus for the study of modern literature.

The authors have not attempted to write a history of socialist literature. Their approach begins with a recognition of the change which has taken place within the perspectives of the socialist imagination itself. They cite the stirring red dawns, the conversions to solidarity and the strikes in socialist novels before the Great War, and point out how inappropriate such moments are in the age which followed. Robert Tressell and Upton Sinclair are useful examples of such socialist triumphalism, symptoms of which are detected in Steinbeck (who "craves more of a solution to the crisis than history has actually offered"), and in a host of Stalinist novels which might easily be discussed in this context, but which Craig and Egan tactfully ignore. Books which are realistic to the point of pessimism about the prospects of socialism are found to be more relevant than those which naively wave flags. It is not therefore surprising that the imaginative response to the failure of revolution figures more centrally in *Extreme Situations* than does work like John Reed's *Ten Days that Shook the World* and Trotsky's *History of the Russian Revolution*, which are not mentioned at all. Craig and Egan discuss Malraux's novel on the failed Chinese revolution, *La condition humaine*, and Anne Seghers's book on the defeat of the German resistance to Nazism, *The Seventh Cross*; they read James T. Farrell's *Studs Lonigan* as having been written from the perspective that "American capitalism would continue to operate at the expense of the people as a whole and [would] sweep aside any attempt at opposition", and they take Silone's *Fontamara* as recognising that "the political and economic enslavement of the [Italian] country folk was more or less total, and the novel ends in massacre, flight, and exile". Their attitude towards Britain is that there is no possibility "for a perspective of decisive social change" and that we are in a period of "cultural exhaustion".

The extreme pessimism of *Extreme Situations* requires further comment. The greatest single influence on the authors is Victor Serge, whose novels are discussed at some length, and whose *Memoirs* have clearly become a central text for them both. Serge's career as a revolutionary and anarchist culminated in a searing experience in Russia where he had gone after the revolution to work in the Comintern. He saw the last public demonstration of opposition to the Bolsheviks at the funeral of Prince Kropotkin. Serge writes with intense anguish at the accumulating betrayals of the revolution. The suppression of the Kronstadt rebels, and the systematic lies about their rebellion in the Soviet press, left Serge with few illusions about the innate ethical superiority of the revolutionary left. Allied for a time with the ineffectual Left Opposition of Trotsky, Radek and Kamenev, Serge was eventually swept into prison where he would have perished, like so many others, had not a vociferous campaign by Trotskyists in France effected his release and expulsion from Russia. Serge eventually found refuge in Mexico, but broke with Trotsky over the question of whether Russia should be supported, *faute de mieux*, because it was still a "workers' state", deformed or not. Serge could not swallow this, and died in utter neglect in Mexico. His reputation as a revolutionary of exceptional spirit and integrity, and his achievement as a novelist and political analyst, are very highly regarded on the left today.

Craig and Egan prefer the "epochal intensity" of Serge's *The Case of Comrade Tulayev*, a novel on the great purges in Russia, to Solzhenitsyn's *The First Circle*. They compare the presentation of Stalin in both novels, and strongly defend Serge's as "more complex, more tragic". Alan Swingewood initiated this comparison in *The Novel and Revolution* (1975), where he argued that Serge's view of the revolution was essentially naive and anarchistical, and that *Comrade Tulayev* contains a pessimistic, not a tragic view of the world. Craig and Egan find Serge's pessimism and disillusionment highly relevant to the prospects for a socialist literature in our time because Serge alone among the western writers discussed here remained a socialist and a revolutionary even after his immersion in the Gulag. Serge's confession of revolutionary hope at the end of his memoire resembles a similar moment at the end of Orwell's *Homage to Catalonia*. After having seen so much deceit and wickedness, Orwell felt that the whole experience had left him with "not less but more belief in the decency of human beings". There is a fascinating comparative study to be made of these men of such prickly integrity. Serge's influence on the left today is substantial. Orwell has, one feels, been appropriated by social democrats and demagogic tories; his pessimism was ultimately nostalgic and conservative. Serge, more politically-minded, cannot so readily be appropriated by the enemies of socialism. Perhaps this explains why he exerts such a strong influence throughout *Extreme Situations*, and why the uncomfortable "truths" of Orwell play so small a role.

Many of the writers discussed in this book are not socialists, or at least are not socialist writers, whatever their politics at any given period may have been. Craig and Egan tend to sympathize with socialist attempts to grapple with extreme situations. They deplore the crudities of Solzhenitsyn's anti-Marxism, and regard Fedin's trilogy to be most worthwhile when most clearly anti-Stalinist. They do not, however, prefer Cecil Lewis and Auden who they come to write on the Spanish Civil War. "Auden's depressed morale gave him a truer perspective on the immediate political future than the revolutionary elan of Cornford". Craig and Cornford as essentially a spectator in Spain, and credit Auden (excessively, I think) with "the most sustained piece of Marxist *thinking* in any of the creative media". This is unfair to Cornford who fought at Huesca, Madrid and Cordoba in the eight or ten weeks he was actually at the front between August and late-December 1936, when he was killed. He remains the Rupert Brooke of the left, the embodied promise and illusions of a generation. Auden's "Spain" is less Marxist, less perceptient about anything other than Auden, than Craig and Egan suppose. But their argument here indicates an important element of freedom from simple political criteria in their approach to literature. Nevertheless it remains true that Marxist writing is good; depressed, disillusioned anti-Stalinist Marxism (*à la* Sorge) is better; but Koestler, Malraux and Barea are best on Spain, and not a Marxist among the lot.

At times the concept of the "extreme situation" loses its specificity and becomes interchangeable with "the bad thing" (taken from Heller's *Catch-22*), a generalized dread or anxiety; it also becomes a humane concern for the prospect of freedom in our time. One suspects that the theme of unfreedom is much more pervasive than is indicated here. Literary dystopias and nightmares of technological enslavement, as in *Brave New World*, an Orwellian view of political oppression constitute major strands of bourgeois culture. Beyond this there is a massive literature on social constriction and entrapment, of unemployment or dead-end jobs, of familial and marital exploitation, and of the vast range of oppressions which are beneath notice of the truly heroic mode, but which constitute an increasingly common sort of unfreedom in society. The exaltations of racism, self-expression and liberation, come, by a curious twist of fate, to resemble yet other, subtler forms of oppression. In an age of transformation whose fulfillment has yet to be perceived, the victims of oppression in the world of Seghers and Serge are those incorruptible socialists. In the world those self-same socialists are particularly portrayed as being indistinguishable from full-blooded fascists, and as being themselves essential threat to the freedom of everyone else. The literature of unfreedom has a mirror structure in which oppressor and oppressed come to lose their identities, gradually come to change to become each other: "The enemy outside looked from pig to man, and from man to pig, and from pig to man again, but already it was impossible to say which was which" (*Animal Farm*).

Craig and Egan's range is wide enough for one to wish it were wider. They do not include affirmations of the human spirit as Elie Wiesel's *Night*, one of the precious literature of the holocaust save Primo Levi, in *If this be a man* they title correctly. Tadeusz Borowski's *Way for the Gas, Ladies and Gentlemen*, and the novels of Isaac Joshua Singer (especially his *Eden*, the first and most powerful of the anti-Bolshevik novels) have been welcome. The unfortunate absence is Styron's *Sophie's Choice*, which appeared after this book was complete. Styron's attempt to come to terms with Auschwitz, and his remarkable success in doing so, confirms the correctness of Craig and Egan in feeling that these terrible extreme situations are ones which are found, or should be, at the centre of our imaginative life today. Craig and Egan have so much found new and fertile approach these themes, as it is clearly seen how narrow and sterile the study of literature has become without them.

Eric Homberger

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International approaches to the urban condition

Urban Planning in a Capitalist Society
by Gwyneth Kirk
Croom Helm, £10.50 and £5.95
ISBN 0 85664 929 5 and 0302 2

The City and Social Theory
by Michael Peter Smith
Blackwell, £12.00 and £3.95
ISBN 0 631 12151 X and 12351 2

These two books are welcome additions to the literature which aims to present a radical analysis of urban social theory and practice. Until fairly recently, we have had to rely on supplements of varying quality from the "alternative" positions or translations into barbaric English from the presumably strongly critical of the French Marxists. So it is very refreshing to find these two new texts presenting complementary studies of the urban condition and urban theory written, respectively, in admirably lucid English and American, and whose overall structure would have excited the admiration of Monsieur Jet alone Hippodamus of Miletus.

Both of these books are, in their very different ways, extended critical reviews of literature and both, in Kirk's words, treat planning as "both a technical and political activity concerned with the allocation of scarce resources—land, capital, private enterprise, public investment, etc." Their structures are complementary in that, while Kirk reviews literature in relation to themes, Smith adopts an extended critique of a number of authors.

For example, Kirk, after a rather impersonal introduction, leads into a lucidly written "beginner's guide" to radical urban theory and practice. Her "traditional" place then proceeds in chapter two to set out her stall of four contrasted theoretical approaches—pluralist, bureaucratic, reformist and Marxist. One is left wondering how and why this particular taxonomy was chosen, but the Marxist analysis is distinguished as being the only one which "does not treat economic factors as non-issues". Those of us who are pecking French Marxists do being chauvinistically culture-bound will be pleased to agree with Kirk's opinion that their work does not tell us much about British society but some of us will regret her rather thin treatment of Lefebvre's analysis of the "uniqueness of capitalism". The distance of some of these passages from the everyday content of working-class life is at times painful. Nevertheless the opening chapters have a serious attempt to provide a summary of planning under capitalism and it is one of the few texts which succeeds in showing how development control, for example, sits within the context given by the private property relation. Kirk's major theme, "that it is the contradictions of British capitalism that account for the contradictions of land use planning", is illustrated by a skilful running commentary on the literature.

The next chapter introduces the four major approaches which Kirk uses as her framework and this provides a useful vehicle to carry an introductory review of the literature in these traditions. The chapter on the role of the professional planner is disappointing (and does not seem to be informed of some very important published work), while that on public influence and participation is also rather thin. The concluding chapter is weak and repetitive and one's overall impression is that this book might have risen above an introductory review if Kirk had been clearer about her intended readership, but most of all, clearer about the relationships between land use planning and other activities, that is a crucial nettle which she does not grasp.

Like Kirk, Smith is also concerned to explore the conditions whereby we often mistakenly take as urban problems what are in fact a variety of society-wide ills produced by economic and social inequality. In contrast to Kirk, Smith takes the work of five major sociologists—the Chicago School, Castells, Lefebvre, Harvey and Saunders—and subjects each to extended critical discussion. Like Kirk, too, he does not justify this choice but he adopts an even tighter control over the structure of his text, setting out the major theoretical contributions of each author before submitting their work to dissection and criticism.

Planners and other students of social policy, especially the younger generation, will be intrigued to learn (or learn afresh) of the role that Wirth and the "Chicago School" played in the early development of scientific rational, comprehensive planning long before the models and systems movement of the 1960s. Nobody will be surprised to learn that Freud's theoretical position is paternalist and elitist, implying strong leadership and offering little hope for mass public participation. Similar comments apply to Marx but his dialectical approach leads him to state the primacy of the individual over social order and comprehensive planning. Similar but contrasted anti-comprehensive planning stances are taken by Rossi, one of the main theoretical supports of Californian flower power, and Sennett who advocates a more punk approach to urban problems arguing for complex disorder, unionism and controlled social conflict in urban life.

In his penultimate chapter Smith gives an extended critical commentary on all five theorists but time adopts a thematic approach which explores and often explodes such "myths" as the alleged humanity, pathological high density technocracy, communal spirit and several other phantoms and bolsheviks. A few words to activists and bleeding-heart liberals will squirm on reading the passages but many more will delight in the sweep and imaginative scholarship and in the deadpan sonorous prose. Smith's prose exhausts and fuels her breathless dash through the forest, Smith, striding strongly, his theoretical peaks, provide the finest and most individual of these concluding paragraphs.

Both writers mix quite modest hope. For Kirk, intervention in a market economy . . . is limited by the need not to encroach upon the liberties of the private sector." Smith "the material political economy can produce . . . but not the outer change . . . but we must look elsewhere to build man and or to save our souls".

Brian McLoughlin

Brian McLoughlin is a lecturer, researcher and writer.

BOOKS

For better or for worse

The Micro Revolution : a change for the better or for the worse
by Peter Laurie
Futura, £1.50
ISBN 0 7088 1794 7

The Micro Revolution : the microchip will change your life
by Peter Large
Fontana, £1.50
ISBN 0 00 636091 2

It is rare that two major publishers should cross their wires so badly as to put out two books with exactly the same title at the same time. Give them authors and publishers with similar names, and an identical cover price, and even a cautious buyer could be forgiven for becoming confused between them.

Indeed, the blurbs on the covers of the two books fail to make it clear just how different they are: a particular essential as the two would be appropriate, on the whole, for quite different audiences. While both are concerned with computerisation and microelectronics, and both are written by technical journalists, Peter Laurie's book is by far the more technical of the two. His emphasis is on the hardware, the machines themselves, whereas Peter Large's is on the wider applications and effects; and although Large's book would make easy reading for the almost totally uninformed, Laurie's assumes some technical background and competence. In fact, almost the only thing the content of the two books has in common is the enthusiasm and skill with which they have been written.

Laurie's book is probably the best introduction to how microcomputers work, both from hardware and software aspects, which has yet hit the bookstalls. Indeed, the lucidity and simplicity of style should serve as an example for all technical writers, and will be the envy of those of us with the task of explaining the workings of technology, either in a classroom or to our own children. The descriptions come alive, and even hardened computer professionals would be hard put to fault his simplifications. This will be a valuable guide for all those with a practical or technical involvement with microcomputers.

When to this technical tour de force is added a selection of pungent and witty comments and quotes, both cogent and wincingly abrasive, the book becomes a delight to read. Yet the emphasis in Laurie's book on the current technology, in a field which he acknowledges to have an exceptionally rapid pace of change, will ensure that his book is ephemeral. As he says, "the business of computing is quite independent of what computers are made from"; the information content remains the same, but the method, in these early days of silicon civilisation, does not. Inevitably, a book such as this is partially outdated even before it is published.

Laurie does include some short essays on the impact of microelectronics, which succeed in making the case that the microchip will change our world, but these are both speculative and esoteric. He does not explore the field in depth; nor is it clear from his exposition whether the impacts mentioned could be regarded as for the better or the worse; or indeed what Laurie's own views are on this subject.

In complete distinction, Peter Large is unashamedly committed to one view about the impact, expressed succinctly in his last paragraph. Paraphrased, it reads: why are millions of people spending most of their waking hours doing so many lifeless jobs?—If that's a naive question, it's the naivety of seeing the emperor naked. Large, with indefatigable curiosity about innovative technology, gives example after example of how the developments in microelectronics are pervading all industries, commerce and indeed every organized activity, and how routine human work can be displaced through this process. He also touches on the disorganized activities, making the book's coverage very comprehensive. But always he sees the other side of the coin, and he fairly portrays the apprehension which many of the key innovators themselves have expressed about the wider effects of the revolution they started.

Like others, Large sees no way in which a discontinuity in the employment market can be avoided. The accelerating productivity brought about by new technology is not matched by a corresponding smooth increase in demand, and the problem is exacerbated by the rapid advances in the productive capacities of countries like Taiwan, Hong Kong, Singapore and Japan.

Large is particularly scathing about the inadequate response of our successive governments to the impact of the new technology, and to my personal knowledge his account is accurate and balanced, though inevitably it is simplified. Just as Laurie does (Sinclair more sketchily), Large draws attention to the fantastic potential for participative democracy that is opened up by new technology, and equally to the opportunities for misuse that could still lead to 1984—on time.

In summary, then, both books are bargains at the price, and they should both be bought by all concerned with education. But Laurie's is a book for the library, where it should be well-thumbed and used by those seeking to get to grips with the powerful school and home computers now becoming prevalent. Large's book is one for the personal bookshelf as well, to be read, re-read and puzzled over; because the issues he raises are inescapable in our own lifetime, let alone in that of our children.

Ray Curnow

Ray Curnow is a director of Probit Consultancies Ltd.

Contemporary virology

Introduction to Virology
by K. M. Smith and D. A. Ritchie
Chapman & Hall, £12.00 and £5.95
ISBN 0 412 21960 3 and 21970 0

Introduction to Modern Virology, second edition
by S. B. Primrose and N. J. Dimmock
Blackwell Scientific, £5.25
ISBN 0 632 00463 0

Until recently virology was considered an appropriate subject only for specialized groups such as agricultural, medical and veterinary students, and some microbiologists. The emergence of molecular biology as a central discipline in biology altered this situation slightly, but the bacterial viruses which played such an essential role were regarded more as convenient biochemical and genetical tools and otherwise unexceptional. Viruses began to excite general curiosity following the discovery of the enzyme activity (reverse transcriptase) associated with tumour-inducing viruses of the herpes group, which committed the heresy of reversing the pattern of information flow in biological systems. In the past few years virus research has contributed many other new concepts to biology—such as overlapping genes, splicing of messenger RNA, covalent linkage of proteins and nucleic acid, and much more. Consequently, viruses can no longer be so blatantly ignored, and a knowledge of virology has become an essential component in the education of the contemporary biologist.

The development of virology as a science was accompanied by the appearance of two classic texts by outstanding virologists of their day, *General Virology* by S. E. Luria and *The Biology of Animal Viruses* by Frank Fenner. These books, subsequently extensively revised, remain influential and authoritative texts of virology, but neither are specifically tailored to the needs of contemporary students nor their teaching means. In recent months several books have made their appearance which endeavour to fill this vacant niche. The two new differ in approach to such an extent that there is little overlap. Both could be read with profit.

An Introduction to Virology, by K. M. Smith and D. A. Ritchie, is the more elementary and less demanding book. The emphasis reflecting the interests of the senior author (a former Director of the ARC Virus Research Unit) lies with the viruses of plants and insects and their intriguing biology. The text is well referenced, follows the historical development of virology, and is illustrated with numerous original and historic electron micrographs.

The book is loosely organized, proceeding through selective and anecdotal accounts of morphology, purification, classification, and pathogenesis, to two chapters contributed by Professor D. A. Ritchie on the replication and genetics of viruses. These two chapters are an elegant distillation of the significant features of the molecular biology of viruses. The remainder of the book deals with an assortment of topics including tumour viruses, tissue culture, assay, and disease control.

The strength of the book lies in its appeal to the imagination (ranging as it does from the legend of the Ancient Mariner on page 1 to viral insecticides on the last page), and the lucid and relaxed style of writing. It conveys the flavour of virology in lieu of comprehensive coverage. In many areas, however, it is seriously outdated and it does not deal adequately with the tumour viruses. It is remiss to dwell on the work of Jenner on smallpox vaccination in 1796 and omit mention of the WHO vaccination programme which culminated in 1977 in the liberation of human society from this scourge—undoubtedly one of the major medical achievements of our era. There is trivial confusion of nanometers and micrometers (pages 23 and 32), and one might assume erroneously that whooping cough is a virus infection (page 190).

An Introduction to Modern Virology, by S. B. Primrose and N. J. Dimmock (now in its second edition), is addressed to a more advanced readership and aims at a comprehensive account of virology with uncompromising emphasis on its molecular aspects. The authors have succeeded in condensing a great deal of information in a relatively confined space, and the text is well illustrated with numerous line diagrams. Indeed, this book is impressively up-to-date and accurate. The inevitable penalty of topicality is that some sections have been overtaken by the rapid advances of molecular virology.

The discussion of some areas may not satisfy the experts (virology is still a frontier science with its ritual confrontation of goodies and baddies), but the uninvolved student will find this book exceptional value. The chapters follow a logical progression from definition of a virus through structure, nucleic acids, the process of infection, lysogeny, host-virus interactions, immunity, interferon, vaccines, chemotherapy, oncogenesis, prions, future trends, and finally classification. References are not provided in the text but there is an appendix with a good reading list.

A useful feature is the classification included at the end of the book. This provides a sketch of each virus type alongside the taxonomic details. There is strong emphasis throughout on integration of examples from bacterial, plant and animal viruses. Generally this has been achieved skilfully, but the chapter on lambda bacteriophage just falls short of the clarity of the other sections, although paradoxically relatively more space is devoted to this subject. There are a few inaccuracies: for example, the figure illustrating the lesmerism of the genome of herpes simplex virus (page 60) does not indicate the inversion of the small unique region clearly, although the explanation is correct; more surprising is the failure to indicate that the genome of autonomous parvoviruses is negative-stranded DNA (page 76).

Both these inexpensive books can be recommended as stimulation for a new generation of students.

C. R. Pringle

C. R. Pringle is a researcher at the MRC Virology Unit, Glasgow, and honorary lecturer in virology at the University of Glasgow.

X-ray sources

Cosmic X-ray Astronomy
by D. J. Adams
Adam Hilger, £13.50
ISBN 0 85274 253 3

The first detection of X-rays from a source outside the solar system occurred during a rocket flight in 1962. Since then, two decades of remarkably active work with space vehicles have resulted in many important discoveries and have secured for X-ray astronomy a significant role in the development of astronomy as a whole.

The most powerful sources within galaxies like the Milky Way are double stars where one star of the pair is a so-called collapsed star such as a neutron star or black hole. The properties of such stars, some of which may be measured in X-ray sources, are of interest not only to astronomers, but also to physicists. There are several reasons for this. The gravitational fields in each type are strong, especially of course in the black hole, and the nuclear material in the neutron star is potentially capable of providing information on nuclear forces in an interesting region of internuclear separation. Moreover, neutron stars may have very large magnetic fields—5.10^8 T at the surface—and there is a possibility of interesting new quantum physics here.

The X-ray emission from extragalactic sources is equally interesting, promising new insights for astronomy, physics and cosmology but at the present time it is generally less well understood. Within the past year, the link between X-ray astronomy and astronomy as a whole has been greatly strengthened by work done with the Einstein observatory, an orbiting X-ray telescope, which has discovered X-ray emission from almost every type of ordinary star.

With such a background, Dr Adams's book not unnaturally seeks to capture a wide readership from amateur astronomers seeking a knowledge of a fast developing but, for them, somewhat remote part of their subject, to undergraduates. The latter may consist of astronomers or the considerable number of physicists for whom short courses in astrophysical topics are available as options. These are, of course, two quite different types of reader and it is to be expected that some compromises will have been made to accommodate them both—mostly, I think, at the expense of the amateur, who will be faced from time to time with accounts of topics such as inverse Compton scattering which are unlikely to be very rewarding, although they are entirely appropriate for the undergraduate.

The bias of the account is astronomical rather than physical—there is for example no discussion of the structure of a neutron star. The book will be quite accessible to undergraduates with a background in physics. The text is clear and readable, and I am not aware of another book which covers the same ground. It would have been better if SI units had been used, not C.G.S., whatever the practice in astronomy, but the few conversions required are simple, and a table of equivalents is included.

A. P. Willmore

A. P. Willmore is professor and head of the department of space research at the University of Birmingham.

Mechanical logic

Problems and Solutions in Logic Design, second edition
by D. Zissos, with contributions by F. G. Duncan
Oxford University Press, £10.00
ISBN 0 19 859362 7

Symbolic logic has all the qualities of the great intellectual games, like Chess and Go, in that the rules and axioms are simple and few, yet the capability for development is immense. The analogous rudimentary computer, the Turing machine, has the potential of performing any computation, no matter how complex, given sufficient time. Digital systems have this same property but operate more effectively by utilizing structural complexity to gain speed of response. The achievements of silicon-processing technology encourage the use of complexity but, in so doing, place an ever-increasing burden on the digital designer whose ecological niche lies on the interface between logic and the machine. His task is to convert system descriptions, hopefully uniquely specified, into realizable electronic structures, frequently in the form of silicon chips and subject to commercial constraints like feasibility, cost, reliability, performance, testability, and so on. He is one of the most sought-after professionals of the present age.

The knowledge required to perform this task effectively is immense, although much is now being done to develop methodologies to ease the burden and to delegate to data banks the memory of standard structures. Yet the basic principles have changed little since Russell and Whitehead or even since Boole. The only additional major factor has been implementation, the requirement that gates or multiplexors, or even more complex basic cells, can be connected together to achieve the desired performance without using too many, or taking too long, or there being a high probability that the answer, when obtained, will be wrong.

This art is called "logic design" and Professor Zissos and his co-author are active practitioners in this field. The recent revision of their textbook *Problems and Solutions in Logic Design* is aptly named. Much of the book consists of problems and solutions embedded in a text which is devoted almost exclusively to a description of effective rule-of-thumb techniques. Although the expert might wish to look elsewhere for information, there is much that is relevant to the needs of students on introductory courses in logic design and possibly sufficient to interest those industrialists and academics whose activities lie outside the area of logic design but who may wish to obtain rather more than a superficial understanding of the principles involved.

The introductory chapter on basic concepts in logic design is supported by a useful appendix on Boolean logic which includes the use of simple design aids such as Karnaugh maps. The order of presentation in this chapter is typical of the text as a whole. It treats gates, state diagrams, race hazards and multiplexors. Each section is presented with reasonable clarity, but the overall impression is that the continuity of development could have been improved. Subsequent chapters deal comprehensively with unclocked and clocked sequential circuits, with circuits driven by non-overlapping pulses (which eases the design problem), with counters, and with combinational circuits; in this last section, however, the treatment concentrates on restrictions arising from fan-in (number of input connections) with race hazards (the logic being upset by one pulse arriving before another). Throughout, there are numerous examples, all soundly based on contemporary practice and most with sufficient detail of the solution method to aid understanding and enable application of the technique to other similar problems.

Presentation generally is reasonable, with clear and helpful diagrams. Repeated references (almost exclusively) to other texts by the same authors grated slightly after a while and a feeling of déjà-vu arose when reading the introductory paragraphs of each of the major chapters.

The book is readable (in places), reasonably accurate and possibly helpful. It might prove to be a struggle for those totally unfamiliar with the field and a little frustrating for the experts. For everyone else there could be something of interest and possibly of value.

W. D. Ryan

W. D. Ryan is professor of electronics at the Queen's University, Belfast.

NOTICE BOARD

Noticeboard is compiled by Patricia Santinelli and Milo Gold

Grants

Bath

School of Humanities and Social Sciences—£19,000 from the SSRC to research into reasons why more able young people, particularly girls, do not go into industrial engineering, under Professor Stephen Cotgrove.

Exeter

Psychology—£183,743 from the Health Education Council for a project on strategic research in health education, under Professor J. R. Eiser.

Centre for European Legal Studies—£30,000 from the Leverhulme Trust to provide a research fellowship for a study of harmonisation of national laws in the EEC, under the direction of Professor D. Lasok, director of the centre.

London School of Economics

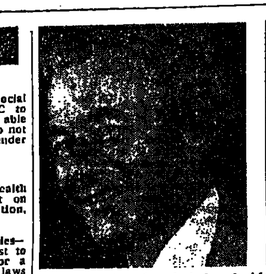
Social administration—£42,599 from the SSRC for a survey of resource allocation in the social services, under Mr Howard Glennerster.

UMIST

Mathematics—£21,000 from the SRC to make computer simulations to find out more about the thin gas which exists in the dark spaces of galaxies that may be 100,000 light years across, under Dr David Williams.

Swansea, University College

Chemical Engineering—£68,000 from the SRC for continuation of research into the transportation of solids as a suspension in water.



Portsmouth Polytechnic has decided to recognise outstanding academic merit and leadership qualities through the creation of professional appointments. It has now conferred the title of professor on the following: Mr Geoffrey Broadbent, head of the school of architecture, Mr Gareth Jones, reader in biological sciences and Mr John Vail, head of the department of geology.

Appointments

Southampton

Readers, conferment of the title: Dr C. B. Chapman (accounting and management economics); Dr M. J. Fisher (institute of sound and vibration research); Dr D. M. Hill (politics); Dr J. A. John (mathematical studies); Dr B. S. Westcott (mathematical studies). **Senior lecturers**: R. S. J. Briggs (geriatrics); Dr K. S. Cliff (community medicine); T. Wheeler (human reproduction). **Lecturers**: R. I. Damper (ship science); A. E. Watterson (adult education); R. J. L. Murphy (education); Dr J. R. Hodges (medicine); D. A. Boston (orthopaedic surgery); Dr K. Wakelin (chemical pathology); T. Cooke (surgery); Dr C. Lewith and Dr M. D. Jewell (primary medical care).

University College, Cardiff

Lecturers: M. A. Bishop (anatomy); R. A. Chandler and M. J. Morgan (accountancy and financial control); A. Coles, D. M. English, A. Hopkins (centre for journalism studies); D. J. Cook and L. J. Whitehouse (industrial relations and management studies); R. S. Drayton, P. G. Sibly, J. R. Williams and M. N. Gray (civil and structural engineering); P. J. Edwards, M. J. Jenkins, M. M. J. Lewis and J. G. Visser (education); R. R. W. Post (computing mathematics); D. V. Shepard (plant sciences); N. H. Thomas (David Owen Centre for Population Growth Studies).

Cambridge

Teaching fellows: C. D. Correll Barnett and Dr Philip Anthony Towle (defence studies, faculty of history).

Keele

Lecturers: D. W. Drakakis-Smith (human geography); R. D. Gould (electronics, in the department of physics); Christine M. Hallett (social policy and social work). **Research fellow**: Gabrielle M. Heathcote (education).

Forthcoming events

"Course for Lecturers" designed to help teachers in higher education improve their teaching methods organised by the University Teaching Methods Units of the Institute of Education from September 15-19. Application forms from UTMU, 55 Gordon Sq., London WC1H 0NU.

Recent publications

Teaching and Instruction: an annotated list of resources for art teachers and trainers compiled by Olivia Gray, fax and published by the Council for Educational Technology aims at people involved with all kinds of teaching and instruction. It is intended as a comprehensive bibliography but much more as a collection of recommended resources which have been found useful by staff running courses in teaching or training methods. Most of the items listed are available for purchase or hire. (Available from CET, 3 Devonshire Street, London W1N 2BA, £2.00.)

Britain in Europe: a newly revised guide to the European Community has just been published by the Federal League for Economic Co-operation to provide a factual background. The first section is a systematic description of the development and workings of the community. The second is an action guide, particularly intended for those who need to make quick reference when they have to speak or write about community matters. (Available from the Commission of the European Communities, 20 Kensington Palace Gardens, London W8.)

Open University programmes August 23 to August 29

Saturday August 23

BBC 1
7.10 Pirouettes: Mechanical processes: Catalysis (P9304; prog 14).
7.40* The Ascent of Man: Hominids 2 (P9304; prog 15).
8.05* Modern art from 1848 to the present: styles and social implications: Surrealism and Film (A921; prog 9).

BBC 2
7.40 History of mathematics: Quaternions (A803; prog 4). Modern Algebra (A803; prog 5).
8.05 The control of education in Britain: Pattern of Difference, 1944 to 1976 (A915; prog 1).
8.30 Other differential equations of applied mathematics: Shallow Water Waves (A304; prog 15).
8.55 Social psychology: Understanding Others (A306; prog 13).
9.20 Spanish and French: Rhondda 2 (Production 1; Quality (B522; prog 9).
9.45* Spanish: Spoken in the town (B522; prog 9). Residential Worker (B522; prog 9).
10.10 Drama: The Reception and the Critic (A307; prog 15).
11.00 Earth sciences: Topics and methods (A335; prog 5). Topics and methods (A335; prog 6).
11.25* Dialects: Heavy Metal Tolerance (A341; prog 7).
11.50 Methods in educational gerontology: Measures Shadows (The Universe Within; Experiment and Design (B537; prog 5).
12.15 Health studies: Stress and Strain (B537; prog 5). Health Promotion (B537; prog 5). Dorset (B537; prog 5).
12.40* Dialects: Heavy Metal Tolerance (A341; prog 7).
13.05* Mathematics foundation course: Lucasian Chair 1 (B261; prog 2).
13.30 Statistics: Random Sampling (A357; prog 7).
13.55 Modelling Surveys (A301; prog 23).
14.20 Mathematics foundation course: Mirror Curves (B261; prog 10).

RADIO 1 (VHF)
Alternative broadcasts: Radio Scotland and Radio Cymru.
7.35* Man's religious quest: Mithraic Symbolism (A040; prog 23).
8.15* An introduction to psychology: Discussion of Information Processing (D8261; prog 14).
8.35* Hands and work: Management Consultants (D8261; prog 13).
9.05* The Victorians: Of 1848: Battle on Shabers (A921; prog 13).
9.15* Renaissance and Reformation: Reformation Studies (A801; prog 20).
9.35 The Spanish Mystics (PA981; prog 7).
9.35 The digital computer: The Specimen Exam Paper (T9321; prog 12).
9.55* Science and society: Speech and Prose (B203; prog 13).

RADIO 3 (VHF)
10.00* Thought and reality: central themes in Wittgenstein's philosophy: Knowing How to Use the Word "Pain" (A102; prog 14).
10.20 Conservative psychology: The Scientific Study of Mind, Brain and Behaviour (B335; prog 3).
10.40 Materials under stress: The Dislocation Theory (T9321; prog 8).
11.00* The rise of modernism in music 1900-1950: The Origins of Jazz (A308; prog 13).
11.40 Telecommunications: Systems: The Spectrum Examination Paper (T9321; prog 7).

Radio Scotland and Radio Cymru: Alternative broadcasts

23.30* Schooling and society: Speech and Prose (B203; prog 13).
23.50* The revolutions of 1848: Battle on Flaubert (A921; prog 13).

RADIO 3 (VHF): Alternative broadcasts for Radio Scotland and Radio Cymru areas only

24.00* Linear mathematics: Function Approximation (M201; prog 14).
00.30* English urban history 1500-1700: The Restoration Theatre and Changes in Society (A328; prog 7).
00.40* Open Forum 29.

Sunday August 24

BBC 1
7.15 Sesame Street, community work and society: The Shinnie Dimension (D8506; prog 1).
8.05* Earth sciences: topics and methods: Part A: Earth sciences: topics and methods: Part B: Changing Sea Levels (A335; prog 7). Dorset (B537; prog 5).

BBC 2
7.40 Making sense of society: Power in Society: Sun Francisco Area Rapid Transport "Conflicts with People" (D101; prog 9).
8.05* Mathematics foundation course: Sampling Surveys (A301; prog 23).
8.35* An introduction to materials: Transformations (T9321; prog 10).
9.20 Complex analysis: Complex Analysis (B509; prog 7).
9.45 Mathematics foundation course: Sampling Surveys (A301; prog 23).
10.10* Introductory electronics: Digital Instrument (T9321; prog 9).
10.35 Psychology: Disorders (B541; prog 5).
11.05 Mathematics across the curriculum: Drawing to a Conclusion (M2833; prog 5).
11.35 Open Forum 28: Open Lecture: Healing and Spiritual Life.
11.50 Mechanics and applied calculus 2 (M4202; prog 15).
12.15 Systems behaviour: Biological Psychology (T9321; prog 2).
12.40 Modelling in mathematics: First Order Phase Planes (T9321; prog 6).
13.05 Materials under stress: Blind Alternative Diagnosis Process (T9321; prog 13).
13.30 Food production systems: The Food Transport (B203; prog 1).
14.00* Historical: faith and the social sciences: Family life and Family Structure (B303; prog 3).
14.30 The handicapped person in the community: A Fit of the Ow (P9601; prog 5).
15.00 Personality and learning: Generating Behaviour (B505; prog 2).
15.30 Mathematics foundation course: Sampling Surveys (A301; prog 23).
16.00 Experimental control and social behaviour: Ethics (B505; prog 1).
16.30 The early Roman Empire and the Mediterranean: Augustus and the Principate (A220; prog 1).
17.00 Mathematics foundation course: Sampling Surveys (A301; prog 23).
17.25 Mathematics foundation course: Sampling Surveys (A301; prog 23).
17.50 Mechanics and applied calculus 2 (M4202; prog 15).
18.15 Mathematics foundation course: Sampling Surveys (A301; prog 23).
18.40 Mathematics foundation course: Sampling Surveys (A301; prog 23).
19.05 Mathematics foundation course: Sampling Surveys (A301; prog 23).
19.30 Science foundation course: From Dolomite to Granite (S101; prog 27).

RADIO 3 (VHF)
6.00 Curriculum design and development: Primary French: A Discussion (E205; prog 20).
6.20* Digital computer: The specimen Exam Paper (T9321; prog 16).
6.40* Materials under stress: The Dislocation Theory (T9321; prog 11).
16.20 Personality and learning: Adjustment: A Closer Look (B201; prog 26).
18.40* Political economy and taxation: Budget Review (D542; prog 7).

RADIO 4 (VHF)
23.20 The Reformation in Retrospect: Renaissance and Reformation (A801; prog 27).
Reformation Studies: PA981; prog 8).
23.50 The Enlightenment: Adam Smith and the American Colonies (A324; prog 27).

RADIO 3 (VHF)
Alternative broadcasts for Radio Scotland and Radio Cymru areas only

00.00* Man-made fumes: design and technology: Project Work (T422; prog 14).
00.20* Microeconomics: Investment Appraisal (D302; prog 14).
00.40* Materials under stress: The Dislocation Theory (T9321; prog 8).

Monday August 25

BBC 1
6.40 National income and economic policy: The Barber Years (D284; prog 1).
7.05 Patterns of inequality: Limits of political inequality (D305; prog 14).
7.30 International politics and foreign policy: Settlement of Revolution: The Balkan Heights (D336; prog 7).
8.40 Telecommunication systems: Colour Television 2 (T321; prog 16).
9.05 Electronics fundamentals: Sources and Amounts of Materials in Atoms (BM302; prog 5).
9.30 Linear mathematics: Chebyshev Polynomials (M201; prog 07).

RADIO 3 (VHF)
6.00 Conflict and stability in the development of modern Europe c 1750-1850: Politics and Society (A309; prog 14).
6.20 Modern Greek course: From Seferis to the Sea (B101; prog 1).
6.40 Mathematics foundation course: Sampling Surveys (A301; prog 23).
8.40 An introduction to materials: Transformations (T9321; prog 10).
9.20 Complex analysis: Complex Analysis (B509; prog 7).
9.45 Psychology: Disorders (B541; prog 10).
10.10 Introductory electronics: Digital Instrument (T9321; prog 9).
10.35 Psychology: Disorders (B541; prog 10).
11.00 Mathematics across the curriculum: Drawing to a Conclusion (M2833; prog 5).
11.20 Open Forum 58: Open Lecture: Healing and Spiritual Life.
11.35 Mechanics and applied calculus 2 (M4202; prog 15).
12.00 Systems behaviour: Biological Psychology (T9321; prog 2).
12.25 Modelling in mathematics: First Order Phase Planes (T9321; prog 6).
12.50 Materials under stress: Blind Alternative Diagnosis Process (T9321; prog 13).
13.15 Food production systems: The Food Transport (B203; prog 1).
13.40* Historical: faith and the social sciences: Family life and Family Structure (B303; prog 3).
14.05 The handicapped person in the community: A Fit of the Ow (P9601; prog 5).
14.30 Personality and learning: Generating Behaviour (B505; prog 2).
14.55 Making sense of society: Legislating Culture (B101; prog 9).
15.20 Experimental control and social behaviour: Ethics (B505; prog 1).
15.45 The early Roman Empire and the Mediterranean: Augustus and the Principate (A220; prog 1).
16.10 Mathematics foundation course: Sampling Surveys (A301; prog 23).
16.35 Mathematics foundation course: Sampling Surveys (A301; prog 23).
17.00 Mathematics foundation course: Sampling Surveys (A301; prog 23).
17.25 Mechanics and applied calculus 2 (M4202; prog 15).
17.50 Mathematics foundation course: Sampling Surveys (A301; prog 23).
18.15 Mathematics foundation course: Sampling Surveys (A301; prog 23).
18.40 Mathematics foundation course: Sampling Surveys (A301; prog 23).
19.05 Mathematics foundation course: Sampling Surveys (A301; prog 23).
19.30 Science foundation course: Fossils and Evolution (S101; prog 28).

RADIO 3 (VHF)
6.00* Patterns of inequality: Inequality and Ideology (D305; prog 15).
6.20 Linear mathematics: Function Approximation (M201; prog 14).
6.40 Microeconomics: Investment Appraisal (D302; prog 14).
16.20 Research methods in social policy: Research Design (D306; prog 1).
18.40 Foundation Maths (T101; prog 1).

RADIO 4 (VHF)
23.20* Twentieth century poetry: Auden (A362; prog 7).
23.50* Man-made fumes: Project Work (T422; prog 14).

RADIO 3 (VHF)
Alternative broadcasts for Radio Scotland and Radio Cymru areas only

24.00* Introduction making 2: Power (T422; prog 22).
00.20* Linear mathematics: Function Approximation (M201; prog 14).
00.40* Microeconomics: Investment Appraisal (D302; prog 14). Electronics: Electronic Study Aids (T9321; prog 7). Behaviour (B505; prog 2).

Tuesday August 26

BBC 1
6.40 Fundamentals of human geography: Rapid Transport (B203; prog 1).
7.05 Biochemistry: Criteria of Purity (B261; prog 5).
7.30 An algorithmic approach to computing: Computing (M401; prog 11).

BBC 2
6.40 Environmental control and public health: Air Pollution, Organisation (B505; prog 5).
7.05 Science and the rise of technology since 1650: The Use of Natural Materials in Construction (A921; prog 1).
7.30 History of architecture and design 1750-1914: The Victorian Town (A909; prog 20). Mathematics foundation course: Sampling Surveys (A301; prog 23).
8.40 Mathematics foundation course: Sampling Surveys (A301; prog 23).
9.05 Mathematics foundation course: Sampling Surveys (A301; prog 23).
9.30 Mathematics foundation course: Sampling Surveys (A301; prog 23).
9.55 Mathematics foundation course: Sampling Surveys (A301; prog 23).
10.20 Mathematics foundation course: Sampling Surveys (A301; prog 23).
10.45 Mathematics foundation course: Sampling Surveys (A301; prog 23).
11.10 Mathematics foundation course: Sampling Surveys (A301; prog 23).
11.35 Mathematics foundation course: Sampling Surveys (A301; prog 23).
12.00 Mathematics foundation course: Sampling Surveys (A301; prog 23).
12.25 Mathematics foundation course: Sampling Surveys (A301; prog 23).
12.50 Mathematics foundation course: Sampling Surveys (A301; prog 23).
13.15 Mathematics foundation course: Sampling Surveys (A301; prog 23).
13.40 Mathematics foundation course: Sampling Surveys (A301; prog 23).
14.05 Mathematics foundation course: Sampling Surveys (A301; prog 23).
14.30 Mathematics foundation course: Sampling Surveys (A301; prog 23).
14.55 Mathematics foundation course: Sampling Surveys (A301; prog 23).
15.20 Mathematics foundation course: Sampling Surveys (A301; prog 23).
15.45 Mathematics foundation course: Sampling Surveys (A301; prog 23).
16.10 Mathematics foundation course: Sampling Surveys (A301; prog 23).
16.35 Mathematics foundation course: Sampling Surveys (A301; prog 23).
17.00 Mathematics foundation course: Sampling Surveys (A301; prog 23).
17.25 Mathematics foundation course: Sampling Surveys (A301; prog 23).
17.50 Mathematics foundation course: Sampling Surveys (A301; prog 23).
18.15 Mathematics foundation course: Sampling Surveys (A301; prog 23).
18.40 Mathematics foundation course: Sampling Surveys (A301; prog 23).
19.05 Mathematics foundation course: Sampling Surveys (A301; prog 23).
19.30 Science foundation course: Fossils and Evolution (S101; prog 28).

RADIO 3 (VHF)
6.00 Mass Communication and Society: Mass Media and Society (D8261; prog 1).
6.20* Linear mathematics: Function Approximation (M201; prog 14).
6.40* Microeconomics: Investment Appraisal (D302; prog 14).
16.20 Research methods in social policy: Prediction and Forecasting (D306; prog 2).
18.40 Mass Communication and Society: Mass Media and Society (D8261; prog 1).

RADIO 4 (VHF)
23.20* Twentieth century poetry: Auden (A362; prog 7).
23.50* Man-made fumes: Project Work (T422; prog 14).

RADIO 3 (VHF)
Alternative broadcasts for Radio Scotland and Radio Cymru areas only

24.00* Introduction making 2: Power (T422; prog 22).
00.20* Linear mathematics: Function Approximation (M201; prog 14).
00.40* Microeconomics: Investment Appraisal (D302; prog 14). Electronics: Electronic Study Aids (T9321; prog 7). Behaviour (B505; prog 2).

Wednesday August 27

BBC 1
6.40 Curriculum design and development: Primary French in the Balance: Part 1: Meeting population: Items from Home (E205; prog 1).
7.05 Complex Analysis: Complex Analysis (B509; prog 7).

BBC 2
6.40 Systems organisation: The management of complexity (A702; prog 1). A Chief of Staff (A702; prog 1). Strategy of Crisis and organisation (A702; prog 1). Nation Building (A702; prog 1). Institutions (A702; prog 1).
7.05 Biological bases of behaviour: Biology (B505; prog 3).
7.30 Biochemistry and molecular biology: Immunology 1: Antibodies (B532; prog 1).
17.15* The nature of chemistry: The Transition Elements (M2833; prog 9).
17.40* Patterns of inequality: Limits of political inequality (D305; prog 14).
18.05 Systems modelling: For Whom Benefit? At What Cost? (T341; prog 1).
18.30 Arts foundation course: Humanities (A401; prog 07).

RADIO 3 (VHF)
6.00 Man's religious quest: Experience: The Root of Religion? (A2408; prog 1).
6.20* History of architecture and design 1750-1914: The Victorian Town (A909; prog 20).
6.40 Curriculum design and development: Primary French: A Discussion (E205; prog 20).
16.20 Personality and learning: Adjustment: A Closer Look (B201; prog 26).
18.40* Making sense of society: Legislating the Future (B101; prog 9).

RADIO 4 (VHF)
23.20 Cognitive psychology: Capturing Intelligence (B505; prog 10).
23.50* The control of education in Britain: Up to 16 The Way Through the Woods (B915; prog 9).

RADIO 3 (VHF)
Alternative broadcasts for Radio Scotland and Radio Cymru areas only

24.00 The rise of modernism in music 1900-1950: The Origins of Jazz (A308; prog 13).
00.40* Telecommunication systems: The Spectrum Examination Paper (T9321; prog 7).

Thursday August 28

BBC 1
6.40 The control of education in Britain: Degrees of Discretion (B915; prog 10).
7.05 Genetics course: and its Society: Genetic Information (P9601; prog 1).
7.30 Transmission station (P9601; prog 1).
7.30* Technology for teachers: Technology Study: Teaching Industry (B203; prog 9).

BBC 2
6.40 Homeomorphisms: Introduction 39 (A304; prog 1). Homeomorphisms: Introduction to analysis and topology (A304; prog 1).
7.05 Digital computer: Compiler (T9321; prog 15). Digital computer: Subroutines and Performance (T9321; prog 14). Digital computer: Operations and systems software (T9321; prog 16). Digital computer: Prediction and Forecasting (T9321; prog 17).
18.35* Mathematics foundation course: Sampling Surveys (A301; prog 23).

RADIO 3 (VHF)
6.00* Patterns of inequality: Inequality and Ideology (D305; prog 15).
6.20* Linear mathematics: Function Approximation (M201; prog 14).
6.40* Microeconomics: Investment Appraisal (D302; prog 14).
16.20* Research methods in social policy: Research Design (D306; prog 1).
18.40 Foundation Maths (T101; prog 1).

RADIO 4 (VHF)
23.20* Twentieth century poetry: Auden (A362; prog 7).
23.50* Man-made fumes: Project Work (T422; prog 14).

RADIO 3 (VHF)
Alternative broadcasts for Radio Scotland and Radio Cymru areas only

24.00* Introduction making 2: Power (T422; prog 22).
00.20* Linear mathematics: Function Approximation (M201; prog 14).
00.40* Microeconomics: Investment Appraisal (D302; prog 14). Electronics: Electronic Study Aids (T9321; prog 7). Behaviour (B505; prog 2).

Friday August 29

BBC 1
6.40 Oceanography: Data and Theory (T9321; prog 1).
7.05* Food Technology: Food Additives: Minutes Sugar (B203; prog 1).
7.30 The nature of chemistry: Electrons and Bonds (M2833; prog 10).

BBC 2
6.40 Art in History: Landscape: Patrons Paintings (A909; prog 1).
7.05 Geometry: Case Study (A304; prog 1).
7.30* Materials: Different Forms of Alloy: Bimetals (T9321; prog 12).
8.35* National mountain Barber Years (D284; prog 7).

RADIO 3 (VHF)
6.00 Mass Communication and Society: Mass Media and Society (D8261; prog 1).
6.20* Linear mathematics: Function Approximation (M201; prog 14).
6.40* Microeconomics: Investment Appraisal (D302; prog 14).
16.20 The Computer Age: Computer Crime (T9321; prog 3).
18.40 Mass Communication and Society: Mass Media and Society (D8261; prog 1).

Radio Scotland and Radio Cymru: Alternative broadcasts

23.30 The British Film: Hitchcock (A921; prog 13).
23.50* Renaissance and Reformation: Reformation Studies (A801; prog 27).

RADIO 3 (VHF)
Alternative broadcasts for Radio Scotland and Radio Cymru areas only

24.00 Introduction making 2: Power (T422; prog 22).
00.20* Linear mathematics: Function Approximation (M201; prog 14).
00.40* Microeconomics: Investment Appraisal (D302; prog 14). Electronics: Electronic Study Aids (T9321; prog 7). Behaviour (B505; prog 2).

Classified Advertisements Index

Appointments vacant
Universities
Fellowships & Studentships
Polytechnics
Technical Colleges
Colleges and Institutes of Technology
Colleges of Education
Colleges of Further Education
Colleges and Institutes of Higher Education
Colleges and Departments of Art
Research Posts
Administration
Overseas
Adult Education
Librarians
General Vacancies

Official Appointments
Appointments wanted
Other classifications
Awards
Announcements
Exhibitions
Personal
Courses
Holidays and Accommodation

Universities

THE AUSTRALIAN NATIONAL UNIVERSITY

Applications are invited from suitably qualified persons for appointment to the following positions:

RESEARCH SCHOOL OF EARTH SCIENCES

RESEARCH FELLOW IN EXPERIMENTAL PETROLOGY: The School possesses a well equipped experimental petrology laboratory including a wide range of solid pressure media, high pressure, high temperature apparatus, together with diamond anvil systems equipped with laser heating. High temperature furnaces equipped for experimentation under controlled oxygen fugacities are also available. Extensive facilities for chemical analyses and other studies of high pressure phases exist. These include two electron probe microanalysers, an ion probe microanalyser, X-ray diffraction equipment, 200 kv electron microscope and ultrasonic apparatus for measuring elastic properties at high pressure.

The successful applicant should hold a PhD degree and possess a good background in relevant fields such as geochemistry, chemistry and physics, and, preferably, should possess experience in the use of some of the above techniques. He or she will be expected to participate in research projects dealing with the constitution and composition of mantle and crust, in collaboration with Professor A. E. Ringwood, Dr L. G. Liu and Dr I. N. S. Jackson. In addition to these cooperative projects, the successful applicant will be allowed ample time to conduct his own independent research programs in the general field outlined above.

RESEARCH FELLOW IN COSMOCHEMISTRY: The successful applicant for this position should be interested in applying the methods of experimental petrology to cosmochemical problems relating to the chemical composition, internal structure and evolution of the moon, and/or of the parent bodies of meteorites. Research programs envisaged include partition equilibria of siderophile elements between metallic and silicate phases, redox equilibrium and oxygen fugacities in lunar and terrestrial rocks, and in meteorites, and phase equilibria relevant to the origin of lunar basalts. The recent position in Professor Ringwood's research group and the equipment available is detailed in the preceding advertisement. It will also be possible for the successful applicant to work in Dr Congston's research group, with access to a newly developed ion probe microanalyser and extensive mass spectrometry facilities. Skill and experience in meteorite petrology would be desirable for a candidate wishing to work in this latter area.

The successful applicant should hold a PhD degree and possess a good background in relevant fields such as geochemistry, lunar science, and meteoritics. Preferably, he or she should possess experience in application of the relevant experimental techniques. The successful applicant will be expected to participate and contribute to on-going research programs in cosmochemistry but will also have sufficient time to pursue independent lines of research.

No fixed closing date is specified for the above positions. However, applicants are invited to submit an outline of their proposed research programs with their applications as soon as possible.

FACULTY OF ARTS

Department of Prehistory and Anthropology

LECTURER IN MATERIAL CULTURE: Applicants should have a good scholarly record in research and teaching on the production and use of artefacts and their relationship with the wider cultures of which such objects are a part. This new post, which is intended to integrate the study of analysis of material culture, will research interests of both the prehistory and social anthropology sections of the department.

The Head of the Department of Prehistory and Anthropology, Professor Anthony Forge and Professor John Mulvaney, Members of the department have considerable interests in the study and analysis of objects and more particularly the study of prehistoric and contemporary ethnographic art. The appointee will add and enhance the interests into the more general field of material culture in the department. The post will be financed initially by the Australian Institute of Aboriginal Studies and the appointee will also be required to undertake a study of Australian Aboriginal perceptions of their material possessions focusing on Aboriginal views and concepts relating to preservation/curation of material objects. The necessary research funds and adequate funds for the research will be provided.

CLOSING DATE: OCTOBER, 1980.

FACULTY OF LAW

SENIOR LECTURER/LECTURER: LECTURERS (two): Duty in the first instance to teach in the Faculty of Law from the commencement of the 1981 academic year at the beginning of March.

Subject to the post of Lecturer/Senior Lecturer, the Faculty would wishes to attract the services of a person with interests in Property Law and/or Environmental Law. Consideration will be given to the respect the research interests are being imposed, although the Faculty would also wish to hear from candidates to contribute to the Faculty's teaching program and to conduct research within their own fields of interest.

CLOSING DATE: 12 SEPTEMBER, 1980.

SALARY: Salary on appointment will be in accordance with qualifications and within the following ranges: Research Fellow: A$14,500-A$16,500; Lecturer: $A20,501-$A27,740: Senior Lecturer: $A28,501-$A32,000 per annum. Present exchange rates: $A1 equals $US1.12.

TERM OF APPOINTMENT: Research Fellow/Senior Research Fellow: Three years with possibility of extension to five years. Senior Lecturer/Lecturer: Four years with the possibility of reappointment thereafter.

OTHER CONDITIONS: Reasonable appointment expenses are paid for a single person. Assistance will be available for applicants who are eligible to be accompanied by their families. Accommodation is provided for the first six months in Canberra. The University reserves the right at any time to withdraw from the position or to make an appointment by invitation only.

Applications should first obtain the further particulars from the Registrar, Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF.

Applications are invited for the following posts, for which applications close on the dates shown. Salaries (unless otherwise stated) are as follows: Senior Lecturer $A28,501-$A27,741; Lecturer $A17,736-$A25,333; Principal Tutor $A17,024-$A19,487. Further details and application procedure may be obtained from The Association of Commonwealth Universities, (Appts.), 36 Gordon Square, London WC1H 0PF unless otherwise stated.

The Flinders University of South Australia

SENIOR LECTURER/LECTURER IN ACCOUNTING

School of Social Sciences

The University conducts a graduate Diploma in Accounting course, under the direction of Mr. G. R. Mitchell. Reader in Accountancy. The course is in its third year and has received strong student support. The highly qualified and well motivated students provide a stimulating teaching environment; the staff, together with small class numbers and active support from the University is highly conducive to the pursuit of research interests. Informal enquiries may be directed to Mr. Mitchell.

Superannuation is on the F.S.S.U. pattern.

Further information about the position, including conditions of appointment and duties required of applicants, may be obtained from The Registrar, The Flinders University of South Australia, Bedford Park, South Australia 5042, with whom applications should be lodged, in duplicate, by 15th September 1980.

PRINCIPAL TUTOR DEPARTMENT OF PSYCHOLOGY

Applications are invited for the position of Principal Tutor in the Department of Psychology. The position is tenurable and is required to be taken up on 1 January 1981. The appointee will have the administration of the first-year undergraduate course as a major responsibility. Expertise in the area of experimental design and analysis and experience in teaching tertiary students are desirable. Applicants should have a higher degree in Psychology. Enquiries may be made to the Chairman, Department of Psychology in the University, 20 September 1980.

The University of Adelaide

SENIOR LECTURER IN ORAL DIAGNOSIS

Applications are invited from persons with a registrable dental qualification who also have an appropriate postgraduate qualification, for the above-mentioned appointment from January 1981 or as soon as possible thereafter, for a period up to 3 years.

The successful applicant will be required to develop oral diagnosis and treatment planning in the undergraduate curriculum, in co-ordination with the Dental Department of the Royal Adelaide Hospital, the appointee will establish a joint Hospital Treatment Planning Unit, and University Oral Diagnosis and will be expected to formulate postgraduate and research programmes relative to the discipline.

The appointee will be attached administratively to the Department of Dental Health, but due to the interdisciplinary nature of the appointment the successful applicant will be responsible in curriculum matters to the curriculum Co-ordinating Committee.

SALARY scale within the range $A23,000-$A27,741 with superannuation.

APPLICATIONS, in duplicate and including details of academic record and experience, and names and addresses of two or three referees, should reach the Registrar of the University, G.P.O. Box 498, Adelaide, South Australia not later than 30 September, 1980.

The University of Wollongong

LECTURER IN STRUCTURAL ENGINEERING

(Limited term appointment of 2 years)

The appointee will be responsible for teaching undergraduate and postgraduate subjects in structural engineering and mechanics, including analysis and design of steel, concrete, timber and brick structures. The appointee will also be required to supervise some higher degree students undertaking research in structural engineering. Further details may be obtained from Associate Professor G. W. Lloyd, Chairman, Department of Civil Engineering in the University.

Applicants should have a higher degree in the area of structural engineering or equivalent qualifications with appropriate professional experience. The appointment is for a limited term of 2 years and should be taken up not later than early February, 1981.

Fares to Wollongong for the appointee and dependants would be paid and a relocation allowance is payable. The University would consider contributing to the cost of relocation on conclusion of the appointment. 15 September, 1980.

La Trobe University, Melbourne

School of Behavioural Sciences

LECTURERS IN PSYCHOLOGY

2 positions

Department of Psychology

Applicants should have practical, research and teaching experience in clinical or professional psychology, since the main responsibilities of the persons appointed will be to teach and professional training coursework, supervise students in a programme and associated undergraduate courses. Preference may be given to clinical or professional psychologists who also have research interests in at least one of the following areas: experimental psychology, brain-behaviour relationships, developmental psychology, social psychology. Both positions are tenurable. The applicants will be required to commence duties on 18 April 1981 or 24 April 1981 or as soon as possible after these dates. Enquiries may be made to the Chairman of the Department in the University. 29 September, 1980.

THE UNIVERSITY OF AUCKLAND

New Zealand

DEPARTMENT OF MECHANICAL ENGINEERING

(School of Engineering)

Chair in Mechanical Engineering

Closing date 31 October, 1980

The position is a newly established second Chair in the Department. Applicants should be experienced teachers and have a strong research record.

Senior Lectureship

Closing date 10 October, 1980

Applicants should have a strong academic background in Engineering, preferably with postgraduate qualifications. An interest and background in the economic aspects of engineering, particularly as they relate to the manufacturing industry is desirable.

Lectureship/Senior Lectureship

Closing date 17 October, 1980

Applicants should have a strong academic background in Engineering, preferably with postgraduate qualifications. Applications will be considered from those with qualifications and experience in any field of mechanical engineering but preference may be given to those whose interests fit in with one of the fields of activity already developed in the Department.

Energy Research Fellowship to study the use of CNG as an alternative transport fuel

Closing date 26 September, 1980

This is a full-time appointment initially for 2 years with salary at Senior Lecturer level. Applicants should be research engineers or scientists with a strong background in engine or related research and development. A good academic qualification is required. Applications from those with interests in the broader aspects of research on engines and alternative fuels will also be welcomed, in particular those with background in engine control systems.

Commencing salaries will be determined in accordance with qualifications and experience. Present salary scales are: Lecturers, NZ$18,148-$24,015; Senior Lecturers, NZ$19,063-$21,857; Professors, NZ$30,366-$38,038 per annum. Conditions of Appointment and Method of Application for all positions are available from the Assistant Registrar (Academic Appointments), University of Auckland and from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF.

Applications in accordance with "Method of Application" should be forwarded as soon as possible but not later than the closing dates stated.

THE UNIVERSITY OF NEW SOUTH WALES

Sydney, Australia

Vice-Chancellorship

(Amended closing date)

Professor Rupert Myers, CBE, FTS, has indicated his wish to retire from the office of Vice-Chancellor and Principal on 31 July 1981.

Enquiries, applications and suggestions are invited by the selection committee which has been established to recommend an appointment to the University Council. The University reserves the right to consider persons other than those who submit applications.

Letters marked "Confidential" should be addressed to the Hon. Mr Justice G. J. Samuels, Chancellor, University of New South Wales, P.O. Box 1, Kensington, New South Wales 2033, Australia (from whom further particulars are available) and should preferably arrive not later than 1 October 1980.

NEW ZEALAND

UNIVERSITY OF OTAGO

Dunedin

CHAIR OF LAW

The University Council invites applications for a Chair of LAW. Applicants are expected to possess a PhD or equivalent qualifications in the fields in which they are specially qualified.

Professorial salaries, which are regularly reviewed, are present provided for on a scale with a minimum of NZ$30,000 rising in three steps to NZ$31,612 to a maximum of NZ$33,224.

Further particulars are available from the Secretary, Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF, or from the Registrar, Dunedin, the University of Otago, P.O. Box 56, New Zealand, to whom applications should be lodged, in duplicate, by 30 September 1980.

LEEDS

THE UNIVERSITY

SCHOOL OF EDUCATION

Applications are invited for the following appointments in EDUCATIONAL PSYCHOLOGY: (a) Chair of Educational Psychology in the above school. They may be addressed with teaching experience, research and administrative experience in the field of educational psychology and the application of psychology to be diversely.

Salary for the scale for lecturers, £8,099 to £10,484 (under review).

Application forms and further particulars may be obtained from the Registrar, the University, Leeds (quoting reference number 77/79) to reach him by the closing date for applications, September 30, 1980.

Universities continued

UNIVERSITY OF THE WEST INDIES
JAMAICA

Applications are invited for the following posts:

(1) PROFESSOR OF SPANISH
Specialist in Latin American Literature required. Duties to be assumed as soon as possible.

(2) PROFESSOR OF MANAGEMENT STUDIES
Applicants should have considerable teaching experience at undergraduate and/or graduate levels as well as a record of publications in the field. Duties to be assumed as soon as possible.

(3) SENIOR PROGRAMMING CONSULTANT, COMPUTER CENTRE, (SENIOR LECTURER/LECTURER GRADE)
Duties of post include giving advice to users and prospective users; upgrading the systems and modifying statistical packages; and responding to requests for computer data. Applicants should have at least five years' experience in Data Processing and be proficient in Fortran and either Cobol or RPG languages. Experience of Computing in a university environment an advantage. Duties to be assumed as soon as possible.

(4) LECTURER/ASSISTANT LECTURER IN ACCOUNTING, DEPARTMENT OF MANAGEMENT STUDIES (TWO POSTS)
Applicants should have a relevant university degree and/or be members of a recognised professional Accountancy body. Duties to be assumed as soon as possible.

(5) SENIOR LECTURER/LECTURER/ASSISTANT LECTURER IN FRENCH (TWO POSTS)
Applicants, who should have native or near-native competence in French, will be expected mainly to develop and apply materials for university level language teaching, but ability to teach undergraduate and post-graduate courses in French linguistics is essential for at least one post. One post will be vacant from 1st October, 1980.

Salary Scales (from 1/8/80): Professor in range J22,844-J28,284 p.a. Senior Lecturer J17,774-J21,312; Lecturer J13,318-J15,905-J16,646 p.a.
(£1 sterling equals J$4.17). FSSU, Study and Travel Grant, Unfurnished Accommodation or housing allowance. Family passages. Detailed applications (two copies) with curriculum vitae and naming three referees should be sent as soon as possible to the Registrar, University of the West Indies, Mona, Kingston 7, Jamaica. Applicants resident in the UK should also send one copy to the Inter-University Council, 36-41 Tottenham Court Road, London W1P 0DT. Further details may be obtained from either source.

THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY
REGISTRAR

Applications are invited for the post of Registrar which falls vacant upon the retirement of the present incumbent in October 1981.

The Registrar is jointly responsible with the Bursar, for the general and financial administration of the University of which the Registrar is the chief administrative officer reporting directly to the Vice-Chancellor.

The Registrar is Secretary to Council and is responsible for the management of all academic, establishment and general administrative matters. His duties include the administration in relation to University Committees, legal affairs, personnel work, official publications, student admissions, registration and records, together with responsibility for the management and maintenance of University premises.

The salary for the post is K19,810 plus all allowances as being for department, currently K1,100 per annum. (K1 equals Stg. 0.6282).

The initial contract would be for three years. Other benefits include a gratuity of 23 per cent level at 2 per cent, appointment, repatriation and leave fares for the staff member and family after 18 months of service, settling in and out allowance, six weeks paid leave per year, education fares and assistance towards school fees free housing. Salary continuation and medical benefit schemes are available.

Detailed applications (two copies) with curriculum vitae, together with the names and addresses of three referees, should be received by the Vice-Chancellor, Papua New Guinea University of Technology, P.O. Box 793, Lae, Papua New Guinea, by 30 September, 1980. Applicants resident in the U.K. should also send one copy to the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF.

THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY
Department of Civil Engineering
PROFESSOR AND HEAD OF DEPARTMENT

The Department of Civil Engineering is the only body responsible in Papua New Guinea for the education of professional engineers in the fields of structures, hydraulics, public health engineering, hydropower, soil mechanics and transport. These sub-disciplines are organized as options within a single degree.

The Department has an academic staff of 13 and is in the process of transferring its teaching programmes to Papua New Guinea. It also has nine technical officers and some trainees. The Department is very active in consulting and testing work for industry, government and local communities, and an interest in the social and economic development of emergent nations is desirable in the successful applicant.

Salary: K19,810 (Kina 1=Stg: 0.6278), plus head of department allowance. K1,100

Initial contract period, three years. Other benefits include a gratuity equal to 24% (level at 2% pa), appointment, repatriation and leave fares (self, wife/husband, family), settling in and out allowances, six weeks paid leave per year, education assistance towards school fees, free housing, subsidised rent, free medical service.

Applications (two copies) with curriculum vitae, together with the names and addresses of three referees should be received by the Registrar, Papua New Guinea University of Technology, Lae, Papua New Guinea, by 15th September, 1980. Applicants resident in the U.K. should also send one copy to the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF.

ABERYSTWYTH
THE UNIVERSITY COLLEGE OF WALES

DEPARTMENT OF ROMANCE LANGUAGES

Applications are invited for the post of LECTURER in French in the Department of French. Applicants should possess a Ph.D. or equivalent degree, or be close to completion of a doctorate, and are expected to teach the whole range of French language and literature courses.

The successful applicant will be expected to develop research in one of the literary periods or genres represented in the syllabus.

Salary: on the scale for lecturers in universities and colleges.

Further details and application forms for the above posts may be obtained from the Personnel Office, University College of Swansea, Singleton Park, Swansea, SA2 8PP, to which office they should be returned by the above dates.

NEW ZEALAND
UNIVERSITY OF CANTERBURY

UNIVERSITY POST-DOCTORAL FELLOWSHIP IN FRENCH

Applications are invited for the post of Post-Doctoral Fellow in the Department of French. Applicants should have a Ph.D. or equivalent degree, and should be able to teach French language and literature courses.

The salary will be at the rate of NZ$12,742 per annum, rising by annual increments to a maximum of NZ$15,000 per annum.

Further details and conditions of appointment may be obtained from the Association of Commonwealth Universities (Appointments Committee), 36 Gordon Square, London WC1H 0PF.

university college of swansea

Temporary Lecturer

Applications are invited for the vacancy of Temporary Lecturer in the Department of Geography. Applicants should possess special qualifications within the field of Surveying/Cartography / Photogrammetry / Remote sensing and in addition to appropriate academic qualifications have professional experience within one of these fields. Experience of computer operations is also required. The appointment will be for two years in the first instance from October, 1980 or as soon as possible thereafter. The salary will be made within the lower half of the scale £5,052-£10,484 plus USS/USDPS benefits.

Closing date for applications (3 copies), Friday, September 19th, 1980.

Research Assistant

Applications are invited for the post of Research Assistant in the Department of Chemical Engineering. Applicants should have a good honours degree or an M.Sc. in Chemical Engineering. The successful candidate will work on the Hydraulic conveying of solids in shear thinning suspensions financed by the Engineering Directorate of the SRC. Existing installations will be used to study the transport of coarse solids in vertical and horizontal pipelines using shear thinning suspensions as the transport media. The main requirement will be a strong interest in the physics and engineering of hydraulic conveying, but an appreciation of the numerical and computing techniques involved will also be necessary. The person appointed will be encouraged to register for a Ph.D.

The appointment, which will be from October 1, 1980, or the soonest date possible thereafter, will be for one year in the first instance with the possibility of renewal for up to a further two years, and the commencing salary will be on a scale up to £5,052 per annum plus USS/USDPS benefits.

Closing date for applications (2 copies), Monday, September 15th, 1980.

Further details and application forms for the above posts may be obtained from the Personnel Office, University College of Swansea, Singleton Park, Swansea, SA2 8PP, to which office they should be returned by the above dates.

UNIVERSITY OF PAPUA NEW GUINEA

Applications are invited for the post of

DEPUTY LIBRARIAN

Applicants should have a degree and library qualification or equivalent; experience of academic libraries preferably in several departments; experience in personnel work and staff training; the ability to remain calm at times of crisis; patience and a sense of humour. Experience of Third World librarianship advantageous. For further information about the Library, contact the University Librarian, P.O. Box 4819, University P.O., Papua New Guinea.

Salary: K18,510 p.a. plus gratuity. (£1 sterling K1.56). Three year contract. Support for approved research; rent-free accommodation; family passages; baggage allowance; leave fares after 18 months service; education subsidies; salary continuation scheme to cover extended illness or disability. (Applicants resident in the U.K. should also send one copy of their application to the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF.

NEW ZEALAND
VICTORIA UNIVERSITY OF WELLINGTON

LIBRARIANSHIP (INFORMATION SCIENCE):

LECTURESHIP in the DEPARTMENT OF LIBRARIANSHIP. The appointee will be responsible for teaching programmes in the Diploma of Information Science for the Department's Postgraduate Diploma in Librarianship Programme and to assist in developing the Department's programme from February, 1981.

BUSINESS ADMINISTRATION (2 Posts)

LECTURESHIP in the DEPARTMENT OF BUSINESS ADMINISTRATION. One appointee will be made in Business Finance and Finance and the other in Organisational Behaviour/Personnel Management. Duties include teaching in appropriate general or specialist Masters' degree programmes, and the ability to contribute to consultancy work with organisations or undergraduate degree programmes. Appointees should have degree and preferably postgraduate qualifications. From February 1981.

ENGLISH LITERATURE

LECTURESHIPS in the DEPARTMENT OF ENGLISH LITERATURE. One appointment will be made in 16th-18th Century English Literature and the other in 19th-20th Century Literature. The 16th-18th Century appointee will teach Renaissance poetry and prose, Augustan poetry and prose, the novel, and other teaching and research in 16th-18th Century English Literature. The 19th-20th Century appointee will teach Modernist poetry and prose, the novel, and other teaching and research in 19th-20th Century English Literature.

Applicants should have a higher degree or equivalent and preferably have published in their area of specialisation. Salary: Lecturer NZ$15,742 to NZ$21,742; Senior Lecturer NZ$18,836 to NZ$22,716 (key NZ$24,453).

Government superannuation is available. Removal and travel expenses will be assisted in specified limits.

Further details and general conditions of appointment are obtainable from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF, or from the Registrar of the University.

Applications close on September 15, 1980.

NEW ZEALAND
LINCOLN COLLEGE
(University College of Agriculture)

LECTURESHIPS IN SOIL SCIENCE

The Council of Lincoln College invites applications for appointment to Lecturerships in the Department of Soil Science. The successful appointees will be expected to specialise in the area of soil fertility, and to contribute to courses from graduates in Agronomy or any other suitable discipline.

The successful applicants will be appointed as Lecturer or Senior Lecturer. Salary: Lecturer NZ$15,742 to NZ$21,742; Senior Lecturer NZ$18,836 to NZ$22,716 (key NZ$24,453).

Government superannuation is available. Removal and travel expenses will be assisted within specified limits.

Further details and general conditions of appointment are obtainable from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF, or from the Registrar of the University.

Applications close on September 15, 1980.

NEW ZEALAND
VICTORIA UNIVERSITY OF WELLINGTON

LIBRARIANSHIP (INFORMATION SCIENCE):

LECTURESHIP in the DEPARTMENT OF LIBRARIANSHIP. The appointee will be responsible for teaching programmes in the Diploma of Information Science for the Department's Postgraduate Diploma in Librarianship Programme and to assist in developing the Department's programme from February, 1981.

BUSINESS ADMINISTRATION (2 Posts)

LECTURESHIP in the DEPARTMENT OF BUSINESS ADMINISTRATION. One appointee will be made in Business Finance and Finance and the other in Organisational Behaviour/Personnel Management. Duties include teaching in appropriate general or specialist Masters' degree programmes, and the ability to contribute to consultancy work with organisations or undergraduate degree programmes. Appointees should have degree and preferably postgraduate qualifications. From February 1981.

ENGLISH LITERATURE

LECTURESHIPS in the DEPARTMENT OF ENGLISH LITERATURE. One appointment will be made in 16th-18th Century English Literature and the other in 19th-20th Century Literature. The 16th-18th Century appointee will teach Renaissance poetry and prose, Augustan poetry and prose, the novel, and other teaching and research in 16th-18th Century English Literature. The 19th-20th Century appointee will teach Modernist poetry and prose, the novel, and other teaching and research in 19th-20th Century English Literature.

Applicants should have a higher degree or equivalent and preferably have published in their area of specialisation. Salary: Lecturer NZ$15,742 to NZ$21,742; Senior Lecturer NZ$18,836 to NZ$22,716 (key NZ$24,453).

Government superannuation is available. Removal and travel expenses will be assisted within specified limits.

Further details and general conditions of appointment are obtainable from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF, or from the Registrar of the University.

Applications close on September 15, 1980.

NEW ZEALAND
UNIVERSITY OF CANTERBURY

LECTURES IN MATHEMATICS

Applications are invited for appointments as Lecturer in the DEPARTMENT OF MATHEMATICS.

Applicants from any field will be considered. Preference will be given to qualifications and experience in Applied Mathematics and/or Statistics.

Applications close on October 31, 1980.

The salary for Lecturer is NZ$15,742 to NZ$21,742 with a possible maximum of NZ$24,453 per annum.

Further particulars and conditions of appointment may be obtained from the Association of Commonwealth Universities (Appointments Committee), 36 Gordon Square, London WC1H 0PF.

KENT
UNIVERSITY OF KENT AT CANTERBURY

FACULTY OF SOCIAL SCIENCES

LECTURER IN SOUTH EAST ASIAN STUDIES

Applications are invited for a post of LECTURER IN SOUTH EAST ASIAN STUDIES in the FACULTY OF SOCIAL SCIENCES. The appointment will commence on January 1, 1981, or as soon as possible thereafter. Amongst other duties, the appointee will be required to teach a survey course on South East Asian History.

Salary according to qualifications and experience will be on the scale £4,860 to £10,011 a year, but the appointee is unlikely to be under 30 or above a starting salary of £6,261 per annum (the fifth point of the scale).

Application forms (three copies) and further particulars of the post will be sent upon receipt of a stamped addressed envelope (10p). Apply to Mr. J. E. Reilly, Senior Assistant Registrar, The Registry, The University of Kent, Canterbury, Kent, to whom completed application forms should be returned not later than Friday, September 26, 1980. Please quote reference No. A.108/80/T.L.E.S.

NEW ZEALAND
THE UNIVERSITY OF AUCKLAND

ANTHROPOLOGY
LECTURESHIP IN LINGUISTICS

Candidates should be able to teach and supervise research in descriptive linguistics, including phonology, grammar and field methods, and in comparative linguistics, and should have recent interests in the Pacific or be prepared to develop such interests. Closing date: October 3, 1980.

COMPUTER SCIENCE
LECTURESHIP

Applicants should have a higher degree together with research and practical experience in several of: large systems and microcomputer hardware; data communications hardware and software; operating systems software and compilers; statistical computation. Closing date: October 3, 1980.

EDUCATION
LECTURESHIP

Applicants should have major teaching and research interests in the philosophy of education and should also be qualified and experienced in teaching courses in the history of education. It is expected that candidates will have a doctorate in education, attention applications from others with a strong teaching and research record will be considered. Closing date: September 26, 1980.

MANAGEMENT STUDIES
LECTURESHIP IN MANAGEMENT SCIENCE

Applicants must hold a higher degree and preference will be given to those with a strong disciplinary background and an interest in applied research, preferably with interests in areas such as manufacturing and distribution control, management information systems, decision analysis, and strategic management are encouraged to apply. Closing date: October 31, 1980.

MANAGEMENT STUDIES
SENIOR LECTURESHIP

Applications are sought from candidates with qualifications and experience in academic, consultant or business managers. Preference will be given to applicants who have major teaching, research and/or practical experience in the following fields: International Business / Strategic Management; Operations Management / Productivity Management; Management Information Systems / Financial Management. Closing date: October 10, 1980.

Commencing salaries will be determined by reference to qualifications and experience. Present salary scales are: Lecturer NZ$15,742 to NZ$21,742; Senior Lecturer NZ$18,836 to NZ$22,716 (key NZ$24,453). Government superannuation. Appointment and Method of Application forms and further details are available from the Assistant Registrar (Academic Appointments), University of Auckland and from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF.

Applications in accordance with a Method of Application form should be forwarded as soon as possible but not later than the closing dates, stated above.

Polytechnics

PLYMOUTH POLYTECHNIC
Faculty of Science: Department of Environmental Sciences

LECTURER II GEOLOGY

Salary: £5,229-£8,436 (under review)

To teach on major geology courses in Combined Studies B.Sc.(Hons), Environmental Science B.Sc.(Hons) and subsidiary geology courses. Experience in stratigraphy, interpretative geology, mapping and fieldwork will be advantageous.

Application forms to be returned by Friday, 12th September, 1980, can be obtained with further particulars from the Personnel Officer, Plymouth Polytechnic, Drake Circus, Plymouth PL4 8AA.

Fellowships and Studentships

NOTTINGHAM
THE UNIVERSITY

DEPARTMENT OF ENVIRONMENTAL DESIGN

Applications are invited for

LECTURER IN ENVIRONMENTAL SCIENCES

To teach environmental science and design of environmental services, structures and related design studies.

Applicants should possess qualifications with good honours in environmental science or equivalent, and should have particular interest in building science and related design studies.

Salary: Lecturer Grade 1: £4,860-£5,910; Lecturer Grade 2: £6,261-£8,436 (key) (under review).

Further details and application forms from the Personnel Officer, University of Nottingham, University Park, Nottingham NG7 2RD. Closing date: 30 September, 1980.

BRIGHTON
THE POLYTECHNIC

FACULTY OF ART AND DESIGN

DEPARTMENT OF FINE ART

SENIOR LECTURER IN PAINTING

£6,261-£8,436 (key) (under review)

Further details and application forms from the Personnel Officer, Brighton Polytechnic, Moulsecoomb, Brighton BN2 4AT. Telephone: Brighton 693655. Ext. 2836. Closing date: 26 September 1980.

Polytechnics continued

ETHICON-PAISLEY COLLEGE TEACHING COMPANY
Lecturer/Senior Lecturer

Ethicon Limited of Edinburgh, manufacturers of surgical sutures and materials, and Paisley College have formed a Teaching Company sponsored by the S.R.C. and D.O.I. to recruit and train outstanding young graduates for a future career in manufacturing and engineering management at senior level.

The Teaching Company seeks an honours graduate in a numerate discipline such as Mechanical/Production Engineering, Applied Physics or Applied Mathematics, who will be based in the College and will be expected to lead the running of the Teaching Company. The person appointed will also be expected to relieve other staff, who are helping with the Teaching Company, as part of their teaching commitments. A higher degree or experience of industrial research would be an added advantage, the appointment will be for three years.

SALARY — Up to £11,604 according to qualifications and experience.

Application forms and further particulars are available from the Personnel Officer, Paisley College of Technology, High Street, Paisley PA1 2BE (Tel: 041-887 1241, extension 230) to whom completed forms should be returned within 10 days of the appearance of this advertisement.

Informal enquiries may be made to Dr. C. U. Chisholm, Associate Head, Department of Mechanical & Production Engineering (extension 257).

SERVICE TO SURGERY

Leeds POLYTECHNIC
School of Mathematics and Computing

LECTURER II IN COMPUTING

Able to teach up to degree level and with an interest in short course and consultancy development. Preference given to applicants with experience in Systems Software, Small Computer Architecture, Commercial Data Processing especially that involving Systems Analysis and Design. Union membership agreement in operation.

Salary Scale: £5,229-£8,436 (award pending).

Details from:

The Services Officer, Leeds Polytechnic, Calverley Street, Leeds LS1 3HE. Telephone: 0532 462355.

Closing date: 5 September, 1980. Please enclose s.a.e.

BRIGHTON POLYTECHNIC
FACULTY OF SOCIAL AND CULTURAL STUDIES

Head of Department of Librarianship

£10,362-£11,514

Required from 1 January 1981 to head a newly created Department.

Further details and application forms from the Personnel Officer, Brighton Polytechnic, Moulsecoomb, Brighton BN2 4AT. Telephone: Brighton 693655. Ext. 2836. Closing date 12 September, 1980.

LONDON
THE POLYTECHNIC OF NORTH LONDON

DEPARTMENT OF ENVIRONMENTAL DESIGN

Applications are invited for

LECTURER IN ENVIRONMENTAL SCIENCES

To teach environmental science and design of environmental services, structures and related design studies.

Applicants should possess qualifications with good honours in environmental science or equivalent, and should have particular interest in building science and related design studies.

Salary: Lecturer Grade 1: £4,860-£5,910; Lecturer Grade 2: £6,261-£8,436 (key) (under review).

Further details and application forms from the Personnel Officer, The Polytechnic of North London, Prince Of Wales Road, London NW5 3LB.

Closing date: Monday, September 15, 1980.

TEESSIDE
THE POLYTECHNIC

DEPARTMENT OF CHEMICAL ENGINEERING

READER IN TOTAL TECHNOLOGY

Applications are invited for the above post in the Department of Chemical Engineering at Teesside Polytechnic. The applicant must be a Member of the Institution of Chemical Engineers and have evidence of broad energy research involvement in the subject for research and teaching. The appointed candidate will be expected to develop the developing research activity of the Department and have particular responsibility for the welfare and teaching of postgraduates in the Department.

Salary: £6,250-£10,569 (under review).

Application forms and further particulars from the Personnel Officer, Teesside Polytechnic, Borough Road, Middlesbrough, Cleveland TS1 3BA.

Closing date: 12 September, 1980.

ABERDEEN
ROBERT GORDON'S INSTITUTE OF TECHNOLOGY

SCHOOL OF LIBRARIANSHIP

RESEARCH STUDENTSHIP

GRADUATE with First or Upper Second class Honours to research, leading to PhD., in a subject area in Librarianship and Information Studies.

Details from Secretary, RGIT, Schoolhill, Aberdeen AB9 1FR.

BRISTOL
THE UNIVERSITY

DEPARTMENT OF PSYCHOLOGY

POST-DOCTORAL RESEARCH ASSISTANT

S.R.C. funded project on the psychophysics of spatial vision, investigating experimentally the perceptual role and significance of spatial frequency selective mechanisms.

Applicants should hold or be completing a Ph.D. in psychology, neuropsychology or another relevant discipline. Experience in visual or auditory psychophysics, electronics and mini or microcomputer programming would all be advantageous. Tenable for two years, on research Scale 1A.

Send applications (with curriculum vitae), or write for further details, to Dr. M. A. Georgeson, Department of Psychology, 9-10 Berkeley Square, Bristol BS8 1HH, preferably by September 15, 1980.

LEICESTER
THE UNIVERSITY

DEPARTMENT OF ASTRONOMY

Applications are invited for the post of POST-DOCTORAL RESEARCH ASSOCIATE starting 1st October 1980 for 2½ years. The successful applicant will be expected to work on Observational infrared astronomy. The two major research interests of the Leicester group are observations of IR binary stars and (4) galaxies. Experience with infrared instrumentation and observing techniques would be desirable. Salary will be on the range £6,650 to £8,340 according to age and experience.

Further information can be obtained from Dr. R. F. James, Department of Astronomy, University of Leicester, Leicester LE1 7RH, and applications should reach him by 8th September. Applicants should ask up to three referees to send reports by the same date.

LONDON
CITY OF LONDON POLYTECHNIC

RESEARCH POSTS IN PHYSICS

Two research posts are available for research in collaboration with major industrial and government research laboratories.

(i) Experimental investigation of coherent and incoherent light scattering from optically inhomogeneous media.

(ii) Preparation and evaluation of GaAlAs superlattices using microprocessor-controlled molecular beam epitaxy.

Both posts require registration for PhD. Salary is £5,629 in the first year, rising to £7,224 and £8,819 thereafter. Starting date 1 October 1980. Persons graduates with good degrees in physical sciences should apply.

For further details write to: The Secretary, Department of Physics, City of London Polytechnic, Jewry Street, London EC3N 2EY.

SALFORD
THE UNIVERSITY

DEPARTMENT OF ELECTRICAL ENGINEERING

RESEARCH FELLOW

Required to work on S.R.C.-sponsored project to develop an ion induced implantation technique for the production of photo-voltaic solar cells and chemical sensors. Preferred starting date as soon as possible after October 1, 1980. Period of appointment two years.

Salary range: £5,069 to £6,795 per annum. U.S.S. benefits.

Application forms can be obtained from the Registrar, University of Salford, Salford M5 4WT (tel. 061-736 5843, ext. 410), to whom completed applications should be returned by September 30. Please quote the ref. no. 3/557/TES. Informal inquiries may be made to Dr. J. Coates or Dr. A. Hill in the Department of Electrical Engineering.

WALES
UNIVERSITY COLLEGE CARDIFF

WOLFSON CENTRE FOR MAGNETIC TECHNOLOGY

RESEARCH ASSISTANTSHIP

is A RESEARCH ASSISTANT is required on an SRC sponsored investigation into effects of magnetic impurities on electrical properties of amorphous metals. The successful candidate should preferably be a young Electrical Engineer or Metallurgist graduate with some knowledge of magnetic materials and measurements, who would be required to work as part of a small team and who would be expected to develop a similar programme. The appointment will be for a 2 year period starting as soon as possible, and the salary will be on the SRA 1A first point of the scale, £5,069 per annum (under review).

Applications (with full curriculum vitae) should be addressed to the Vice-Principal (University Colleges), University College of Wales, Aberystwyth, Dyfed SY23 1NE, from whom further information is available (tel. 0970 617200 ext. 2419). Closing date: Friday, September 12, 1980.

Librarians

HEREFORD AND WORCESTER
COUNTY COUNCIL

NORTH WORCESTERSHIRE COLLEGES

Applications are invited for the following post: temporary ASSISTANT LIBRARIAN / CATALOGUER. Required for period October 1980 to June 30, 1981.

S.P. 7 (£3,108 - £3,330).

Further details and application forms from the Chief Administrative Officer, North Worcestershire Colleges, School Drive, Bromsgrove, Worcs. Tel.: Bromsgrove 76474.

Research Posts

ABERYSTWYTH
THE UNIVERSITY COLLEGE OF WALES

DEPARTMENT OF AGRICULTURE

Applications are invited for a RESEARCH OFFICER to take part in animal research in Welsh upland farming, for a period of three years (initial appointment of two years plus 1 year). Applicants should have a good honours degree in agricultural science, postgraduate experience would be desirable. Salary on the 1A Scale (Lecturer Grade) £5,069 per annum, £4,430 to £6,395 per annum (subject to review).

Further details and application forms may be obtained from the Registrar (Staff Officer), The University College of Wales, Aberystwyth, Dyfed, SY23 1NE. Closing date for applications, September 6, 1980.

Colleges and Institutes of Technology

Lothian Regional Council
NAPIER COLLEGE OF COMMERCE AND TECHNOLOGY

SENIOR LECTURER IN ACCOUNTING
Salary on Scale: £9,144-£10,176 (BAR)-£11,683 (under review)
Required in the Department of Accounting to teach accounting to Degree and Final Professional levels. The successful candidate will also have certain Departmental and/or Faculty Administrative duties. Applicants should possess a degree or equivalent professional qualifications and preferably have had industrial, research or teaching experience.

SENIOR LECTURER A IN BIOLOGICAL SCIENCES (TWO POSTS)
Salary on Scale: £9,144-£10,176 (BAR)-£11,683 (under review)
Required in the Department of Biological Sciences to lecture in a Biological subject to Honours degree level and to assist in the administration of the department. The areas of particular interest are Human Biology, Biochemistry, Microbiology, Biomedical Sciences, Toxicology and Water Pollution. Proven research ability and a commitment and capability to obtain funding and supervise higher degree candidates is essential.
One of the persons appointed will be responsible for the development of new research teams, not only for all aspects of biology but for interdisciplinary research with other departments, and the other will be required to assist in degree development, particularly a proposed part-time degree.

SENIOR LECTURER A IN BUSINESS STUDIES
Salary on Scale: £9,144-£10,176 (BAR)-£11,683 (under review).
Required in the Department of Business Studies. Applicants should have qualifications in one of the disciplines traditionally associated with Business Studies, and preferably have pursued relevant post graduate studies. Previous degree teaching experience would be an advantage as would previous relevant industrial/commercial experience.
Applicants should possess an honours degree and/or equivalent professional qualifications.

SENIOR LECTURER A IN LAW
Salary on Scale: £9,144-£10,176 (BAR)-£11,683 (under review).
Required in the Department of Law to teach to Diploma, Degree and Post Graduate students: and to students on Professional Courses. The successful candidate will have certain Departmental and/or Faculty Administration duties in addition to a teaching commitment.
Applicants should possess an honours degree and/or equivalent professional qualifications and preferably have had industrial, research and/or teaching experience.

SENIOR LECTURER A IN MANAGEMENT
Salary on Scale: £9,144-£10,176 (BAR)-£11,683 (under review)
Required in the Department of Management to be responsible for the development of a post graduate course in management.
Applicants should have relevant management and research experience. Previous degree level teaching experience would be an advantage. Applicants should possess an honours degree and/or equivalent professional qualifications.

SENIOR LECTURER A IN MATHEMATICS OR STATISTICS (TWO POSTS)
Salary on Scale: £9,144-£10,176 (BAR)-£11,683 (under review)
Required in the Department of Mathematics to join senior staff in planning and administering the teaching, research and consultancy in mathematics and statistics. The persons appointed will be required to develop and co-ordinate consultancy work both within and outwith the College and to take leading roles in research of an applied or interdisciplinary nature.

SENIOR LECTURER A IN OFFICE ADMINISTRATION
Salary on Scale: £9,144-£10,176 (BAR)-£11,683 (under review)
Required in the Department of Secretarial Studies to be responsible for the development of aspects of Office Administration within the College's BA in Commerce, SHND in Secretarial Studies and the Diploma for Graduate Secretaries course.
Applicants should possess an honours degree and/or equivalent professional qualifications and preferably have had industrial, research or teaching experience.

SENIOR LECTURER A IN SOCIAL SCIENCE
Salary on Scale: £9,144-£10,176 (BAR)-£11,683 (under review)
Required in the Department of Industrial and Social Studies to develop teaching and research for CNAA degrees and other courses mainly for Business Sciences, Commerce and Computing.
Applicants should possess an honours degree and/or equivalent professional qualifications and preferably have had industrial, research and/or teaching experience.

LECTURER A IN COMPUTER STUDIES OR DATA PROCESSING
Salary on Scale: £8,199-£9,169 (BAR)-£9,849 (under review)
Required in the Department of Computer Studies to teach either computer studies or systems design to degree, diploma and professional qualification students. Experience in commerce, industry or research in a team implementing computer based systems is required. A commitment to research and/or consultancy is an essential aspect of staff activity and the person appointed will be expected to develop work related to the courses offered by the department.
Applicants must possess an honours degree, or equivalent professional qualification. Membership of the BCS together with good basic qualifications may be acceptable.

LECTURER A IN ENERGY PHYSICS
Salary on Scale: £8,199-£9,169 (BAR)-£9,849 (under review)
Required in the Department of Physics to teach to a range of degree, diploma and certificate students. The person appointed will be expected to undertake applied physics research in one area of energy studies, solar energy applications or alternative energy sources. Preference will be given to applicants who have relevant research and/or consultancy experience. A commitment to research and/or consultancy is an essential aspect of staff activity and the person appointed will be expected to develop work relevant to the courses taught by the department.

LECTURER A IN ERGONOMICS
Salary on Scale: £8,199-£9,169 (BAR)-£9,849 (under review)
Required in the Department of Biological Sciences to join a team of two ergonomists lecturing to degree and diploma students in Biological Sciences, Industrial Design, Interior Design, Catering and Engineering. A commitment to research and/or consultancy is an essential aspect of staff activity and the person appointed will be expected to develop work relating to the courses offered by the department.
The applicant must have an honours degree in Ergonomics or equivalent qualification. A special interest in aspects of Ergonomics related to product design, vision and inspection and applied ergonomics is desirable and industrial or teaching experience would be an advantage.

LECTURER A IN INDUSTRIAL SOCIOLOGY
Salary on Scale: £8,199-£9,169 (BAR)-£9,849 (under review)
Required in the Department of Industrial and Social Studies to teach Industrial and General Sociology on a range of CNAA Degrees.
Applicants should possess an honours degree and/or equivalent professional qualifications and preferably have had industrial, research and or teaching experience.

LECTURER A IN MATHEMATICS OR STATISTICS
Salary on Scale: £8,199-£9,169 (BAR)-£9,849 (under review)
Required in the Department of Mathematics to teach science and engineering students on certificate, diploma and CNAA degree courses. Preference may be given to applicants who have had industrial experience of mathematical applications or who have a further degree in applied mathematics or statistics. The successful applicant must have commitment to participate in applied research and/or consultancy.
Applicants should possess an honours degree or equivalent professional qualifications.

LECTURER A IN SCIENCE STUDIES FOR CHEMISTRY
Salary on Scale: £8,199-£9,169 (BAR)-£9,849 (under review)
Required in the Department of Chemistry to lecture in Chemistry and Science to those who have Chemistry as a subject which the Department runs in association with the Scottish College of Textiles, Galashiels.
A good honours degree, or equivalent qualification in Chemistry is essential and a second qualification in pure science or technology would be desirable, as would post-graduate experience in Chemistry.
Candidates will be expected to have a proven record of research and show the ability and motivation to develop this in line with the needs of the Department and College.
Application forms and further particulars from:
The Administrative Officer (Personnel), Napier College of Commerce and Technology, Colinton Road, Edinburgh EH10 5DT.

Colleges of Higher Education

NIHE

National Institute for Higher Education Dublin
Ionas Náisiúnta um Ardoideachas Baile Átha Cliath

The Institute will be characterised by its special attention to the needs of the community and of Irish industry, business and agriculture. It will consequently place particular emphasis on applied studies.

Applications are invited for appointment to the following post within the Faculty of Engineering and Design.

Head of School of Electronic Engineering

The major course to be conducted initially will be a first degree in Electronic Engineering. In common with the Institute's other courses, it is expected that the graduates of this programme will assist in providing the high-level skills which the Government's expansion programme will require.

SALARY SCALE (Under Review):
£12,758 - £15,020

Application forms are available from:
Personnel Office, National Institute for Higher Education,
1 Lower Grand Canal Street, Dublin 2, Ireland.
Telephone: Dublin 765175.

Colleges of Further Education

SELLY OAK COLLEGES, BIRMINGHAM

HEAD OF SOCIAL STUDIES DEPARTMENT/ PRINCIPAL LECTURER, SOCIAL WORK

Applications are invited for the post of Principal Lecturer in Social Work, to lead a team teaching CQSW Courses specialising in residential and day services.

The successful applicant will also be Head of the Department of Social Studies, which is responsible for other specialised programmes relating to overseas development aid and refugee training. Salary: Principal Lecturer, Birmingham F.E. (under review).

Further details and application form from: The Principal, Selly Oak Colleges, Birmingham B29 6LQ (Tel.: 021 472 4231). (Closing date 5.9.80).

HERTFORDSHIRE

WATFORD COLLEGE, Hempstead Road, Watford. (Watford 42311).

DEPARTMENT OF PROJECT DIRECTION MECHANICAL ENGINEERING

An Engineer with some experience in teaching required by section of above department to lead a team responsible for the development, and teaching, of new work and training materials.

Salary on the Principal Lecturer scale: £6,765 - £8,145 (£7,181 - £8,561 inclusive of Fringe Allowance).

Further details and application forms from the Principal.

Administration

LIVERPOOL

ADVISER IN VISUAL EDUCATION

Required for September or January. Suitable qualification. Applicants should possess a degree in a relevant subject or equivalent. Teaching qualification and relative teaching experience in Liverpool schools. Salary on Chief Teacher Pay Allowance rate per annum.

Further details and application forms available from (S.A.E.) and returnable to the Director of Education, School House, Liverpool L1 2UU, by September, 1980.

Administration

THE ASSOCIATION OF CERTIFIED ACCOUNTANTS
Incorporated by Royal Charter

EDUCATION OFFICER

Applications are invited for this London-based post in the Academic Services Department. The Association is the largest of the chartered accountancy bodies examining in the UK and Overseas with over 60,000 registered students. The Education Officer will be primarily involved in the assessment of educational qualifications for the granting of exemptions from the Association's examinations and with special inquiries from prospective students. A degree or equivalent qualification is essential and some work experience would be an advantage.

Salary will depend on experience and qualifications but is likely to be within the range £4,500 to £5,500 per annum. Applications, quoted and further details may be provided from: Mr. S. D. Gibson, MSc., CEng., The Academic Secretary, The Association of Certified Accountants, 29 Lincoln's Inn Fields, London WC2A 3EG. Tel.: 01-242 6855. The latest date for the receipt of applications is 15th September, 1980.

Courses

THE CENTRE FOR BUSINESS STUDIES

Part time and full time Lecturers

Required from September, 1980, for subjects in the following courses:

MATHEMATICS
SCIENCE
TECHNICAL DRAWING
ACCOUNTANCY

For further details and application form write or telephone to:

The Principal's Secretary,
Centre for Business Studies,
Royal Hill,
Greenwich,
London SE10 8RJ

Tel.: 01-853 4484

General Vacancies

LONDON

IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY (University of London)

MANAGER OF THE IMPERIAL COLLEGE UNION BOOKSHOP

Applications are invited for the post of Manager of the Campus Bookshop. Experience essential in most of the following areas: Buying (books and stationery), Stock Control, Accounting, Shop and Personnel Management.

Salary, depending upon age and experience, not less than £6,864 including London Weighting Allowance.

Applications in writing, including curriculum vitae and names of two referees, before September 30, to: Dr. H. J. Nicholls, Secretary, I.C. Ring, Prince Consort Road, Imperial College, Department of Physics, Exhibition Road, London SW7 2BZ, from whom further particulars may be obtained by written application.

ASSISTANT ACADEMIC REGISTRAR

Up to £9,593 incl. London Weighting

Applicants for this new appointment should be suitably qualified and experienced.

Principal duties and responsibilities will concern all matters relating to examinations throughout the Polytechnic, taking an active part in the Management Team of the Academic Registrar's Department.

Further particulars of this position are obtainable from The Staffing Officer, to whom applications should be returned by 8th September, 1980.

Polytechnic of the South Bank

Borough Road, London SE1 0AA. Telephone: 01-928 8989 Ext. 2023.

LONDON

ROYAL FREE HOSPITAL SCHOOL OF MEDICINE (University of London)

HOUSEKEEPER (Resident or Non-Resident)

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Overseas

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Overseas

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Universities continued

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Overseas continued

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Union View

Breathless notes from the border

David Aaronovitch

The Scottish borders are bleak and beautiful. I am here because there are three major advantages to staying in this little cottage on the side of Cushat Law, near the village of Morebattle. You have to do a lot of walking—and that makes you fit. (I had to walk five miles to post this column). It's a long way to do your shopping—and that makes you eat more sparingly and thus lose weight. It's very cheap and therefore there's more money to spend on clothes.

You see, I've an image problem. When I return to take up the leadership of NUS in the autumn I'll be speaking to thousands of today's students. The new first-years, most of them 17 or 18, will be smart, svelt and critical. To confront them right at the beginning of their careers as NUS members with a shabby, overweight and breathless leader hardly helps to promote the image of NUS as a collection of human dynamos. So, if all goes well, a little trendy youngster will emerge from a gruelling fortnight and the future of the movement will be that much more assured. To reassure those who think that I'm going to fare, I'll forego one of those peculiar floppy belts that they all seem to wear these days.

Many academics, reading this, will find it hard to understand, this preoccupation with image. If this is the case, one asks, why do so many of them assume a uniform of sorts? Who in the academic world would care to pay a pound for every frizzy-haired, bearded, bespectacled lecturer, with patched elbows on faded jackets an brown corduroy trousers that they've met? Or professors with trousers so baggy that you suspect they are trying to hide some of the more embarrassing symptoms of elephantiasis?

If I'm being self conscious, in trying to create an "image" for myself; then I'm no more so than many academics in their attempts to obliterate their own. Watch your colleagues on television (have you seen some of those OU broadcasts?) and with the exception of Laurie Taylor and Tessa Blackstone, educational institutions come over as places devoted to careless dressing and flabby unconcern with appearance. Our great scholars seem to look at their audience out of the TV screen and say, "I've got an extremely large brain, and do not have to worry about wearing awful clothes—and if you studied under me, you wouldn't either".

There are solutions to these problems. But I don't believe that they would be solved by making AUT and Natfhe accept health-club membership as part of the 19.6 per cent award, or the setting-up of a Committee for the Dressing of University Teachers for the CVCP to try not to fund. They shouldn't be solved by my leading a monastic existence for two weeks, either.

At Cambridge a retired colonel has taken up a promise, made during the Second World War, that when he finished with the Army he would be given a place at university. At one of the London polytechnics there is a middle-aged woman who has decided to break out of the trap of under-qualification and take her A levels. Neither of them are going to be over-impressed by my £10 Kings Road swept-back haircut or super thin glossy school tie (all the rage, I gather). They are, however, in a very small minority of non-standard entrants who get into college.

The lack of suitable courses, the extremely unsuitable financial arrangements, the assumptions made in educational institutions, and here I include student unions, that they are catering only for the young—all act as deterrents to the non-standard entrant, and it's difficult to see how the current Government's policies are going to make it any easier for them.

Post-school education will remain vulnerable as long as it is predominantly white, male, middle-class and open only to the young. The majority of people are simply not going to defend it if it is not democratic or accessible enough to satisfy their own aspirations. "Model E" was not just a nice plan created in unrealistic, expansionist days—it could have been a strategy to defend and develop higher education.

Even without government support there is much that colleges could do to improve their record with regard to the admission and encouragement of those people who traditionally do not enter them. Part of this approach will necessitate looking closely at the image of post-school education and trying to obtain a closer identification with it on the part of the general public.

A successful adoption of such policies would have two very beneficial results. The first would be the creation of a large and diverse education lobby. The second would be that next summer I could be lying on a beach, full of pasta and local plonk.

The author is president of the National Union of Students.

The enduring lessons of Sadler

In the winter term of 1908 the Manchester branch of the Workers' Educational Association asked Professor Michael Sadler, then professor of history and administration of education in the university, to give an introductory lecture to a course of six extension lectures on wage problems. He chose as his theme *Education and Unemployment*. Some 70 years later his exposition makes sobering reading. Social changes there may have been in the interim but fundamentally are we still evading basic educational issues?

At the outset Sadler identified four classes of the unemployed. There were those who, having been engaged for short term jobs, were temporarily out of a job. There were those who belonged to trades where the work was dependent on cyclical or seasonal fluctuations. They, though they might obtain during each year a full share of the work available in a given industry, were not at a specific time able to get work in their trade. Then there were members of various trades who were economically superfluous because there was not enough work in their trades to furnish a fair amount to all who wished to earn a livelihood in them.

It was the fourth category that commanded Sadler's main interest. These were the people who could not get work because they were below the standard of efficiency usual in their trades or because their personal deficiencies were such that no one would employ them. In this group was included the large band of young wage-earners who lacked particular skills or qualifications. Sadler argued that it was in lessening the future increase of this fourth group that education should be the main agency. Education could do the most to alleviate this evil of unemployment but he was careful to point out that this did not mean a total reliance on schooling.

Sadler was, of course, much influenced by what he had witnessed in Munich in the day-continuation work pioneered under the guidance of Georg Kerschensteiner. He told his WEA audience that for a majority education "in some suitable form" should be continued "through the critical years of adolescence". He saw the centres where such part-time further education would be provided as each developing "its own community life in order that every pupil might learn to work in fellowservice and with a corporate spirit for the public good".

Essential to this continuation of the young wage-earner's contact with educational influences was the attitude and support of the parents at home. At this point Sadler seemed to introduce a contradiction that is familiar to us in today's attempts at industrial reorganization. He contended that "education should endeavour to increase the mobility of labour among the workers and to stimulate among employers a sense of responsibility for the wise and public spirited organization and direction of labour". By following this path he suggested that education could lessen waste, alike in the use of material, of time and of human service.

The continuing campaign against unemployment, 1980s style. From a Manpower Services Commission pamphlet.

It would be interesting to know how the WEA members reacted to these suggestions. Anyone who has worked in schools in our large cities knows how pupils can become conditioned to the jobs offered by firms in particular localities. When such jobs disappear, there is a lack of adventurousness which ad hoc social and educational policies tend to conceal. Sadler argued for a fully developed scheme of adolescent training and education of a kind which neither the 1918 Fisher Act nor the 1944 Butler Act, in their recommendations for compulsory part-time education, were able to achieve. The conclusion which Sadler put before his listeners in justification of this concentration on the young unemployed has an idealism that is still valid. As he saw it "the highest work of education lay in its indirect influence on social relationships, in quickening human sympathy, in strengthening the feeling of brotherhood, and in creating a desire for a finer quality of human life".

Having launched this WEA course on such a decisive note, Sadler indicated the topics to be dealt with by those who would follow him in the weeks ahead. There were to be three lectures on *The General Principles of Wages*; on *The Effect of Employment of Women on the General Level of Wages*; and on *The Effect of Competition by Alien Immigrants*. Coming after these three sessions would be a further unit dealing with *Employment and Unemployment*; *Wages and Combination*; and *Wages Boards and Wages Courts*. In commending the series to the members of the WEA, Professor Sadler told them that one of the chief tasks of a modern university was to extend and co-ordinate knowledge in the spirit of social service. In dispassionate but sympathetic investigations of social problems it was especially desirable to secure cooperation between the "different types of mind trained respectively by the school of practical experience and by close studies of a more theoretical kind".

J. H. Higginson

The author is a former warden of Sadler Hall in the University of Leeds.

Ted Wragg

Six weeks since the students left, six weeks till they come back, it is at this stage of the summer vacation that I begin to suffer from withdrawal symptoms, pleasant though it is to have time to write up a couple of research reports and do some peaceful reading.

One aspect of term-time that I *miss not one jot*, however, is Senate. I have frequently had the same brief conversation with a colleague from elsewhere. "What's your Senate like?" "Awful". "So is ours". We then exchange anecdotes.

You would think that assembling leading figures in almost every known discipline, this most enviable collection of mental musculature, entirely naturally created and free of anabolic steroids, which any government leader would surely give his eye teeth for, would produce debates of the highest order. Why then is this not the case? Why does the colective IQ drop to the low eighties?

I suppose one reason is that most of the business does not concern us personally. If Dr Blandly-Smiling is keen to be the university's representative on the National Toroise Breeding Society, may he greatly enjoy it. If Professor X wishes to draw our attention to the plight of infra-red spectroscopy in Britain today, well, yes, I'll sign the letter *to the Prime Minister.*

Consequently pent-up frustration and intellectual energy are released when an item occurs which we all think we understand.

Large group dynamics being what they are, we sometimes say what is expected of us rather than what we really believe, acrimony is occasionally generated, scapegoating may take place, the roles of "hard man", "Clown", "elder statesman" and "bright young prospect" are assumed.

Before I ever went to university the man at the corner shop who had a considerable reputation as a local sage, gave me some advice. "When you get to the university, son", he said, "keep your bowels open and your mouth shut". I was only years later that I discovered he said this to everyone, whether they were starting in the local factory or going to Benidorm on holiday.

I was determined to follow at least the second part of this advice when I first found myself on a Senate, but eventually as equally green colleague and myself made impassioned speeches on some issue, During the tea interval a kindly senior administrator took us on one side telling us that this was precisely the sort of thing to do at Senate, that what is more, these matters were noted, and that, although we may be prepared to challenge, we must maintain, we should never be overawed, but confuse the chamber.

Some people actually prepare for Senate like for an Olympic final. One former colleague read every word of every paper, frequently saying, "I am sure the vice-chancellor will recall that in minute 3297 of the March 21 Senate four years ago..." Only when the poor bugger could have been forgiven for not remembering was a single word of the mass of pulp he had had to chew through lanched each over the years.

The major triumph must be reserved for the senator of a northern university who always dined top well before the meeting and then made an inebriated and irrevelent interjection at some point. After a particularly long, winded speech, he slurred voice rang out, "Can anyone tell me what the difference is between what he just said and a barrel of manure?" Stunned silence. "The barrel," someone observed dully.

LETTERS TO THE EDITOR

'Widespread intellectual apathy in Dutch universities'

Sir,—In reporting my resignation from a chair at the Free University in Amsterdam, your correspondent in Holland adds his own gloss, which trivialises the reasons for my decision and obscures the serious issues involved. As he should know, my resignation is not an isolated incident. I am only the latest in a series of foreign professors of various nationalities, of whom the sociologist Alvin Gouldner is perhaps the most widely known, who have resigned from their chairs at various Dutch universities in the past few years for broadly similar reasons.

Our common experience is that of finding the present academic environment in the Netherlands incompatible with effective teaching and research at internationally acceptable standards. This cannot simply be dismissed, as your correspondent infers in my case, as the result of personal failure to adapt to different "social and educational values". The causes are more deep-rooted, and relate to a widespread malaise of intellectual apathy in the Dutch universities.

The gravity of the situation is freely admitted by some of the better (and generally older) Dutch scholars and scientists, who are aware how far the universities have slipped from their earlier academic eminence.

In my opinion, one of the principal causes for this decline and for the frustrations experienced by many foreign scholars, is the effect of the law which minutely regulates the government of the universities (and which has no counterpart in Britain). This law was passed at the height of the student unrest a decade ago, and has obliged the universities to adopt "democratised" procedures of decision-making at every level, down to that of the smallest department.

This structure has been fully exploited for their own ends by a minority of politically active students, but it has also led to a disastrous proliferation of bureaucracy and to the stifling of any academic initiative by senior staff. It is this unfruitful environment that has caused several foreign professors to resign from their chairs out of sheer frustration.

In my own case, a more specific episode was "the drop that made the bucket overflow", as the Dutch graphically express it. Contrary to what your correspondent infers, *after teaching in the Netherlands for six years I was fully aware that* the party-political and university worlds are closely intertwined in Dutch society. I submitted my resignation not because I disapproved of the role of Dutch academics in party-politics, but in protest at a blatant case of political discrimination, of a kind which in my opinion is incompatible with a genuine university in any country.

A member of the staff of my department has been hounded recently in a disgraceful manner on account of his spare-time political interests, although he had done nothing undemocratic or against the law of the land. As more than one national newspaper rightly commented, in editorials on my resignation, my colleague would have had no such troubles in a Dutch university if his political views had been of any left-wing variety.

I do not share his views, but as head of his department I felt bound to defend him and to resist attempts by the university authorities to divert him from his normal academic duties. I was urged to send him on study leave abroad or to allow him to devote himself wholly to research in place of teaching and I was told it would be "undesirable" for him to give his normal lectures to students.

All this, it emerged, was intended to avert the possibility of demonstrations and protest organized by the usual unrepresentative minority of student activists, who are still a powerful group in Dutch universities. I refused to collaborate in these weak-willed and cowardly proposals by the authorities, since they were openly based on political expediency and not on academic grounds and since they amounted to political interference in the academic work of my department. This was the immediate reason for my resignation.

At a time like this, one does not *lightly take the drastic step of making* oneself unemployed, but I felt that a clear public gesture of protest had to be made on this fundamental matter of academic principle.

Yours faithfully,
MARTIN RUDWICK,
c/o Science studies unit,
Edinburgh University.

Lecturer training

Sir,—Staff development is not dead . . . it is alive in the regions and individual institutions. Recent reports in the *THES* and other papers about the demise of the CCTUT overlook several important points. While it is desirable to coordinate activities at a national and regional (or local) level the real work of improving the quality of teaching and learning takes place in individual institutions. National courses and seminars have a place, however it is within departments and faculties that changes are made.

This university has recently set up the University Teaching Centre to be responsible for promoting staff development. Our remit is to provide courses, consultancy and research dealing with the teaching and learning side of the institution's work. Although this work has been undertaken for some 15 years in Aberdeen (since the Hale Report) this new development shows that local concern can be translated into action in the establishment of a centre to be responsible for the work.

I would be very sorry to see the end of the CCTUT; it has provided a useful way of keeping those involved in staff development together. I trust that this function can be taken up in a new and perhaps different form.

If we are no longer to have a CCTUT then my job will be scarcely different; although there may be occasions when it is desirable to bring staff development to the attention of the CVCP and this committee served that function. In Scotland we are left with two centres in our eight universities and a very healthy Steering Committee on Staff Development (for the eight universities).

I trust the NUS and the AUT remember, when they are obtaining column inches for their causes, that there are individuals and institutions concerned to make university education as profitable for staff and students as possible. Committees coordinate, people cooperate, individuals in institutions facilitate improvement.

Yours sincerely,
RAY McALEESE,
Director,
University Teaching Centre,
King's College,
Aberdeen.

Long-winded message

Sir,—You quoted (*THES*, August 1) two passages from a statement by directors of social work courses. The first quotation consisted of one sentence 54 words long and the second was another sentence of 44 words. If these two passages are typical of the composite statement it must have been difficult to read. Long and involved sentences are a certain recipe for confusing and those who wish to persuade others owe it to themselves not to confuse. In an attempt to understand the first passage, I re-wrote it as follows: "These moves towards greater control are anti-educational. They make it difficult for teachers to meet their students' needs and to develop the theory and practice of social work". I think this is what they were saying: I only wish I were sure.

When they leave college, the greatest asset students can have is the ability to write reports which can be read easily by busy people. Who teaches them this?

Yours faithfully,
H. J. CHALLEN,
54 Fitzhugh Park, Bromley, Kent.

Science studies

Sir,—Robin McKie's jumbled account of Sir Alec Cairncross's report to the Nuffield Foundation (*THES*, August 8) suggests that it warns against increasing the number of science studies courses in British universities and polytechnics. This is untrue. Mr McKie totally fails to grasp the distinction made in the report between courses in science studies (see below) to a degree in their own right and those which form a major part of a science or engineering degree. While the justification for increasing the number of the former may be slight, the importance of the latter should not be underestimated. Indeed, the Cairncross document recognizes that "there is a continuing need for injecting into most science degrees some provision for (science studies) minor courses".

Careless reporting of this kind can only be damaging to those attempting to make good some of the worst deficiencies of conventional science and engineering education.

Yours sincerely,
DR RUSSELL MOSELEY,
Technology Policy Unit, University of Aston in Birmingham.

Manpower planning

Sir,—Your feature on manpower planning (*THES*, July 25) contained many valuable insights. Yet the first of the two articles, by Gareth Williams and Oliver Fulton, seemed to some time implying that the Soviet Union's centrally controlled approach to manpower planning "having predicted a certain number of jobs for, say, mechanical engineers . . . can secure that just the right number of vacancies is provided so that practically all graduates with the requisite qualifications can be induced to fill the bureaucratic vacancies". Yet on turning to another page of the same issue I found Michael Binyon in an article from Moscow referring to a survey which "represents a cross-section of Soviet society" and showed that more than half all mechanical engineering graduates were now working in other jobs, and a third of those who had moved out from the technical field had done so simply because they could not find jobs using their qualifications. So much for the achievements of centralized manpower planning in a controlled society.

An appropriate comment on this seems to be that of Lord Robbins in his ninth annual Willis Jenkins lecture, on "Is manpower planning necessary? Is it possible? Is it *next?*", *where he records his conversation* with the minister responsible for manpower planning in Moscow. Mr Rudnev said: "In Russia we have an extremely complicated system of planning; we try to do the optimum size of universities and to distribute our students among the different courses so that industry will have the right people in each year's time. We always get the numbers wrong. You don't seem to make any plans in England and you get your answers wrong too". Lord Robbins adds "we could not dispute which of us was the more efficient". This lecture should be compulsory reading for all would-be manpower planners.

Dr Rudd's assessment of the evidence on manpower shortages and surpluses said that it was "a good indication of the lack of any general shortage of scientists and scientific work that over a quarter of the university graduates with first degrees in science in 1974 went into commerce, mostly accountancy". It would be hard to find more errors of fact and incorrect assumptions concentrated in so few words.

First, there is an elementary statistical error. These 1974 figures actually show that of those who graduated in pure science there were only a fraction over 11 per cent (not "over a quarter") entered employment in the offices of chartered accountants, banks, insurance companies or employers classified as "other commerce". Chartered accountancy recruited only 33 per cent of the total, a clear minority of this 10 per cent. Dr Rudd's figures refer to the percentage of those pure science graduates who entered employment and are retained in those categories. But only 42 per cent of all scientists who each union would have to be organized locally within the institution with the only external government coming from the local authority for polytechnics and public sector colleges.

There were good reasons to change a system which had been criticized by the Public Accounts Committee for its "open-ended" nature. Indeed, both previous governments had sought to amend the existing system, but Mrs Thatcher and Mr Carlisle's proposals seem to avoid the complexities of Mr Prior's two-part system as well as any shift towards a system of voluntary membership of student unions, or even the introduction of independent registrars to monitor union decisions.

The effect of the new system will be to make student unions compete openly for funds from the block grant alongside all the other facilities provided in any university, polytechnic, or college. It is a simple way of ensuring some form of accountability for the money spent by student unions, but for all the pitfalls of the new system, primarily that it could invite confrontation on campuses for scarce resources, were well signposted by all interested parties from vice-chancellors and directors to local authority officers, from other campus unions to the students themselves. The National Union of Students after giving a cautious reception to the proposals set about demanding guarantees to ensure the future of local unions, which they rightly consider essential to campus life, and guidelines to ensure members are not penalized because of local whims. The NUS is worried that local authorities may find nursery provision, sports facilities or student counselling more worthy causes than student unions. The recent news that Dorset has already said that it will attach a low priority to funding student unions, confirms these fears.

CLEA have appealed to the Department of Education and Science for advice for example on how to compare overseas students with home students, how to compare students on advanced courses with those on non-advanced courses, and how to compare those on discretionary awards with those on mandatory awards. Fears that the new system may not work as well as the old could be allayed if the Government now produced guidelines for the future particularly as it has refused any future national negotiations. The matter is urgent as many local authorities have to complete submissions for next year's rate support grant levels in the next two months.

Mature postgraduates

Sir,—While I appreciate that radical changes in postgraduate training in the social sciences may well be necessary, I am concerned that one of the proposals currently being considered by the Social Science Research Council (*THES* August 8) may make it much harder for so called "mature" students, especially women, to undertake a PhD at all. Many such prospective students, because of their spouses' jobs or their children's education, cannot travel far from their home area. This means that they are often unable to consider a choice of institution. For them, it is their local university or polytechnic or nothing.

Without knowing more about the criteria on which students would be selected and allocated to particular institutions, it is impossible to be certain that, in practice, the relatively immobile student would be any more disadvantaged than she or he is at present. I would, however, welcome some assurance that the SSRC is aware of the potential problem and will take steps to ensure that any future arrangements it might make will not unnecessarily discriminate against those who, for very good reasons can only offer one choice of institution.

Yours faithfully,
JACQUELINE BARRON,
Valley View House,
Highridge Road, Dundry, Bristol.

Mature students

Sir,—Your correspondent (*THES*, August 8) seems to be saying that the Open University is not a university because it does not provide for its students the kind of "pastoral care" which universities provide for their students. Surely the Open University is a university because it does provide its students with the kind of education which universities provide for their students, namely, the opportunity to study for degrees and other academic qualifications. The fact that it does so by means of correspondence texts, television programmes, and tutorial assistance rather than by means of lectures, seminars, laboratory work, and residence is irrelevant to the question of its status as a university.

Yours sincerely,
MIKE HARDEY,
Academic Affairs Officer,
Students' Union,
University of Essex.

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Priorities and the Third World

Mr Carlisle was given an easier ride than he could have dared expect at the Commonwealth Education Conference which ended in Sri Lanka last week. Despite their obvious bitterness at Britain's intention to cling to its decision to charge overseas students full cost fees, most Commonwealth nations appear to have decided that nothing more could be gained by public condemnations of a Conservative Government determined not to make even the smallest U-turn. As if to underline the rigidity of government policy on this issue, the Department of Education and Science and the Overseas Development Administration chose the week of the Colombo conference to publish dismissive responses to two select committee reports which cast doubt on the wisdom of the fees decision. Both responses paid the ritual compliments about the contribution of overseas students to British higher education, but went on to say that the British taxpayer can no longer be expected to maintain an open-ended and indiscriminate subsidy. Nevertheless, the aid programme would continue to be used to help carefully selected overseas students take courses which could benefit their home countries.

Like so many recent Government pronouncements on overseas students, this one contrives to miss the point. The provision of inexpensive higher education to students from poor countries is not primarily a charitable service for individual scholars which can be provided through bursary schemes. It is part and parcel of the larger pattern of aid to developing countries, and its withdrawal will have serious consequences for those countries. From the evidence of the Colombo conference it is possible to deduce the chain of consequences which is likely to follow implementation of the British fees policy this autumn.

As a first consequence, the tariff wall Britain has erected around its universities is likely to be aped by the other white Commonwealth nations. Unlike the Soviet Union, which evidently believes that the political harvest it will reap makes the expansion of overseas student numbers worthwhile, Commonwealth nations appear to have *decided* that nothing more could be gained by public condemnations of a Conservative Government determined not to make even the smallest U-turn. As if to underline the rigidity of government policy on this issue, the Department of Education and Science and the Overseas Development Administration chose the week of the Colombo conference to publish dismissive responses to two select committee reports which cast doubt on the wisdom of the fees decision. Both responses paid the ritual compliments about the contribution of overseas students to British higher education, but went on to say that the British taxpayer can no longer be expected to maintain an open-ended and indiscriminate subsidy. Nevertheless, the aid programme would continue to be used to help carefully selected overseas students take courses which could benefit their home countries.

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Superficially, a policy of building or expanding indigenous universities is an alluring way of redeeming national pride, avoiding the ideological perils of what the Reith Lecturer Ali Mazrui in his Reith lectures described as acculturation, and exerting closer control over manpower training than is possible through dependence on other nations. Yet a big upsurge in traditional higher education provision in the developing world could well be a damaging and retrogressive trend.

This is because existing priorities in developing countries are already weighted disproportionately in favour of higher education. Unlike nations which have industrialized *rapidly, like Japan and the Soviet* Union, developing nations have on the whole postponed the introduction of universal primary education in order to invest in secondary and higher education. This is in spite of growing evidence that higher education is astronomically more expensive than primary education and produces a lower rate of return (about 50 per cent less according to latest calculations by the World Bank); and that few developing economies have been able to absorb the skilled graduates and secondary school leavers they produce. In some developing countries governments have been persuaded to guarantee employment to graduates in an effort to ward off political instability, usually with disastrous economic consequences.

The answer, of course, is not to abolish higher education in the Third World, but to share the financial burden internationally. Financially, it would be a small price to pay for the improvement of North-South relations. Politically, Britain's know-nothing response to the Brandt report and stubborn insistence on full cost fees are profoundly depressing.

The problems of union funding

The Government is being slow to produce guidelines to back up the new arrangements for financing student unions which will be introduced in 1981-82. It is now six months since Mr Mark Carlisle MP announced that student unions would no longer be financed through the awards system, but out of the recurrent grants of institutions. The amount of money going to each union would have to be organized locally within the institution with the only external government coming from the local authority for polytechnics and public sector colleges.

There were good reasons to change a system which had been criticized by the Public Accounts Committee for its "open-ended" nature. Indeed, both previous governments had sought to amend the existing system, but Mrs Thatcher and Mr Carlisle's proposals seem to avoid the complexities of Mr Prior's two-part system as well as any shift towards a system of voluntary membership of student unions, or even the introduction of independent registrars to monitor union decisions.

The effect of the new system will be to make student unions compete openly for funds from the block grant alongside all the other facilities provided in any university, polytechnic, or college. It is a simple way of ensuring some form of accountability for the money spent by student unions, but for all the pitfalls of the new system, primarily that it could invite confrontation on campuses for scarce resources, were well signposted by all interested parties from vice-chancellors and directors to local authority officers, from other campus unions to the students themselves. The National Union of Students after giving a cautious reception to the proposals set about demanding guarantees to ensure the future of local unions, which they rightly consider essential to campus life, and guidelines to ensure members are not penalized because of local whims. The NUS is worried that local authorities may find nursery provision, sports facilities or student counselling more worthy causes than student unions. The recent news that Dorset has already said that it will attach a low priority to funding student unions, confirms these fears.

CLEA have appealed to the Department of Education and Science for advice for example on how to compare overseas students with home students, how to compare students on advanced courses with those on non-advanced courses, and how to compare those on discretionary awards with those on mandatory awards. Fears that the new system may not work as well as the old could be allayed if the Government now produced guidelines for the future particularly as it has refused any future national negotiations. The matter is urgent as many local authorities have to complete submissions for next year's rate support grant levels in the next two months.

Layfield's fears become reality

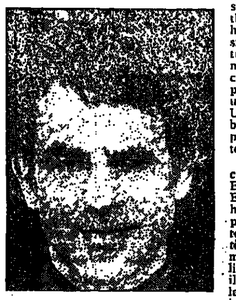
There is an elegant irony in the appointment of Sir Frank Layfield as the independent arbitrator faced with the difficult job of sorting out the financial dispute between Huddersfield Polytechnic and its maintaining authority, Kirklees. In his own Royal Commission report in 1976 Sir Frank said it was essential in local government finance to bring together the problems of spending and raising money. His proposal for a local income tax was rejected out of hand by successive governments to be too complex to be considered, partially responsible for the bizarre new block grant proposal, which are consuming an inordinate amount of time today at the Department of the Environment.

It is hard to imagine any situation which could illustrate better than Huddersfield the very problem so worried the Layfield Committee. The councillors of Kirklees believe that they are responsible, as representatives of the local ratepayers, for the financial management of Huddersfield Polytechnic. The polytechnic, on the other hand, regards the local authority as ill-informed about the nature of higher education and envious of its special status.

These conflicts of perception and responsibility are endemic in the national organization of polytechnic finance. There is some evidence that in the case of Huddersfield, local disagreements and personal animosities have exacerbated an already fraught relationship. But it is nevertheless clear that episodes like Huddersfield, and before it Tameside, emphasize the urgent need to clarify the extent of local authority control over higher education institutions.

Some moves which could help in this direction have already been set in train, but as is so often the case, they are fragmented initiatives which overlap with each other but never make useful contact. The Oakes report, for example, dealt extensively with the financing of maintained higher education but scarcely mentioned its organization and management. The Stephen Jones group, which under the DES is examining the operation of the AFE pool, has an even more limited remit and is unlikely to comment on the constitutional problems of the polytechnics. Meanwhile, yet another DES group has been set up with the local authorities to review the instruments and articles of polytechnic government. Until all these initiatives are combined in a wholesale review of the local government role in higher education disputes like those at Tameside and Huddersfield are bound to recur.

The logic that leads us to Armageddon



Steven Lukes

The world has never been a more dangerous place. The risks of confrontation between the Superpowers are much higher now than during the Cold War, with the level of armaments far higher and escalating according to a logic that is apparently inexorable. The United States and Russia had between them 6,500 substantial nuclear weapons in 1960, 14,200 in 1979 and, even within the rules of SALT II, will have some 24,000 strategic weapons by 1985; if all nuclear weapons are counted, the world's total already exceeds 50,000.

Among the "nearly nuclear nations", India, Pakistan, South Africa, Israel, North Korea, Cuba and Spain are all potential proliferators, not to mention (God help us!) Iraq. The percentage of the world's GNP devoted to armaments ranges between 6 per cent and 8 per cent (as against 3 per cent before the previous two World Wars) and threatens to approach 10 per cent in the next few years.

The logic of the *arms race*—and the craven subservience to its imperatives embraced by the Opposition's spokesman for Defence—is perfectly illustrated in a recent article in the *New Statesman* by William Rodgers:

> Without doubt the SS-20, with its three 150kt warheads, MERVed, mobile and capable of reaching Britain from Soviet bases, is a major advance in Soviet weaponry. Some 60 to 70 are how targeted on Western Europe, and by the mid-80s there are likely to be 200, threatening 600 separate targets. Given such stakes, a major negotiation (inside SALT) is needed to persuade the USSR to limit, then abandon, the SS-20 in return for a NATO decision not to deploy cruise as planned in 1983.
>
> "Does anyone", asks Mr Rodgers, "really think the USSR would have been ready to consider the SS-20's future if NATO had announced any modernization of its own?"

The "modernization" here referred to is the introduction of a new weapons system of 572 missiles into Europe, a "technological breakthrough" offering pinpoint precision that is quite unnecessary for deterrence and which renders its hosts into prime targets. The USSR doubtless sees its introduction as a violation of the spirit of SALT (in any case stalled by the United States) whose key principle is parity of launchers capable of hitting each superpower. The next turn of the spiral will inevitably be a Soviet version of cruise and a further chance for Mr Rodgers to welcome the deployment of our next breakthrough—as a step, of course, towards arms reduction. *Sauter pour mieux reculer.* The process is unending.

Moreover, behind it there is a deeper logic that E. P. Thompson has recently (*New Left Review*, No. 121) christened that of "exterminism":

> 'Exterminism' designates these characteristics of a society—expressed, in differing degrees, within its economy, its polity and its ideology—which thrust it in a direction whose outcome must be the extermination of multitudes. The outcome will be exterminitics, but this will not happen accidentally (even if the final *trigger* is "*accidental*") but as the direct consequence of prior acts of policy, of the accumulation and perfection of the means of extermination, and of the structuring of whole societies so that these are directed towards that end.

The parallel of 1914 is inescapable. One difference, however, is that few prophesied the extent of World War II's devastation, whereas now the prophecy frame itself succumbed to overkill, rendering the unthinkable unbelievable. Perhaps the prospect of a Reagan presidency, which promises to substitute a manicheean and simplistic militancy for vacillation and incoherence in American foreign policy, combined with that of an uncertain succession crisis in the USSR, against the background of a breakdown in detente, is awakening people to the accelerating drive into catastrophe, now under way.

Certainly a resurgence of public concern is apparent, especially in Europe and now at last in Britain. Ever since the early sixties there has been a curious silence in the public arena about these momentous matters. The military and political policy-formers and decision makers, and their attendant proliferating experts, have pursued the illusory logic of *Realpolitik*, insulated from public and even journalistic pressures, so that the recent decision to buy Tridents could be taken without public debate or even *full Cabinet discussion.* The Left has been preoccupied with Third World liberation and the class struggle, threats to civil liberties and racial injustice at home. We are now seeing, with the arrival of CND and the birth of the European Nuclear Disarmament Campaign (END), a return to basic questions of survival.

The recent writings of E. P. Thompson, in particular, have generated a very worthwhile debate and raised questions which demand open and wide-ranging discussion. Among such questions are these. Is it really true, as Peter Jenkins asks, that the Pentagon is preparing to wage a limited nuclear war in Europe? In doubting this, Jenkins makes much of the point that missiles were "not thrust upon Europe by Pentagon warmongers but provided with some misgivings in order to quieten European doubts about the credibility of the United States strategic deterrent". But this does not disprove the existence of a contingency plan for such "theatre warfare". Such contingency plans are clearly part of what President Carter's National Security Adviser Zbigniew Brzezinski described as "a wider range of options than either a spasmodic nuclear exchange or a limited conventional war".

Another question, raised by Conor Cruise O'Brien in *The Observer*, concerns the strategy of European nuclear disarmament itself. O'Brien postulates a future non-nuclear Western Europe outside NATO: "Western Europe would be, for years, a zone of class war (both natural and artificial) and of armed revolution, backed where necessary by Soviet force. At the end of this process, Western Europe would be incorporated, along with Eastern Europe, and the Soviet Union, in a single socialist family . . ."

Assessing this argument requires a judgment about Soviet intentions and capabilities in Western Europe, no less than a judgment about the gravity of the current exterminist threat and the adequacy of current policies to avert it. It is by no means obvious that the only factor, actual or potential, protecting Western Europe from Soviet "engulfment" is the so-called "nuclear umbrella" (let alone the so-called independent deterrents of Britain and France).

However, the END's "best case" proposal is, of course, not West European unilateralism but what Thompson, in his debate with the Soviet historian Roy Medvedev describes as a "general popular initiative, both West and East". Medvedev's reply perhaps raises the most serious question that supporters of END (of whom I am one) must face:

> ". . . there are no means in the USSR by which a 'general popular initiative' can be mobilised—we have no independent free press, and no public movements independent of the control of the Party and the Government."

Medvedev here speaks the simple truth. Moreover, I fear that Eastern European and Soviet dissidents are among the least likely recruits for such a cause. The priority in Eastern Europe is gaining the very rights that would make such a movement possible, let alone effective. Here the Polish workers have been making a mighty contribution during the past few weeks.